FEEDSTUFFS

The Weekly Newspaper for the Feed Industry

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FEEDSTUFFS *Features This Week*

COMPLETE PELLETED FEED—A new mill in Missouri is one of the first built to make a complete pelleted livestock feed including roughage. **Page 18.**

BROILER FEEDING—Northwest Arkansas broiler raisers could replace corn in rations with milo, according to a report on **page 22.**

NEW MILL—Production of this mill goes to tenants of a 13,500-acre estate as well as other customers. **Page 28.**

LAYER FEEDING—Influence of energy intake and temperatures on egg production efficiency is discussed on **page 36.**

PROTEIN QUALITY—An evaluation of methods for measuring protein quality is presented on **page 54.**

— REGULAR FEATURES —

Joe Brooks	26	Worth Looking Into	72
Up or Down	46	Feedstuffs Index	82
Putting Research to Work	50	Classified Ads	94
Convention Calendar	66	Feed Markets in Detail	98

Cow Pool Operator Expands Hog Lease Plan

By JIM RUTTER
Feedstuffs Staff

MESERVEY, IOWA — A swine leasing program, started just over two years ago almost as a "sideline" business for the highly-publicized Fashion Farm Cow Pool in Meservey, is reported moving along at a pretty rapid pace right now. A growing feed business is still another phase of this Meservey operation.

"The hog program, called the Swine Improvement Assn., has really started rolling in the last six or eight months," says Manager Carroll Morris. "We now have about 7,000 sows on lease to about 250 farmers."

So far, Mr. Morris has leased hogs only to Iowa farmers. "We didn't want to move into other states until the needs of Iowans were filled. But we expect to start spreading out into

(Turn to HOG LEASING, page 101)

Experimental Rations Cut Turkey Feed, Time Requirements

STILLWATER, OKLA. — Market-weight tom turkeys with an average body weight of 24 lb. were produced in 21 weeks on 2.25 lb. of feed per pound of gain at Oklahoma State University, and market weight hens with an average body weight of 12

(Turn to RATIONS, page 101)

Feed Firm Serves 'Airport' Feedlot

By Special Correspondent

LAURINBURG, N.C. — Steers are growing their way to market here on a concrete runway of Laurinburg-Maxton (N.C.) airport. They are not blocking aircraft traffic, either, and why not takes an explanation involving a feed manufacturer, a meat packing plant, a bank and the airport's commission.

A custom cattle feeding operation that could mushroom into the largest North Carolina has seen is utilizing an area which had been more or less idle since the armed forces halted glider flight training here 15 years ago.

The airport commission expects to turn out more than 1,000 head of cattle in its first year of operating the feedlots owned by the two neigh-

(Turn to FEEDLOT, page 97)

N.E. Poultry Co-op Offers to Market for Groups in All Areas

NEW YORK—An offer to extend its marketing service to any of the nation's poultry and egg marketing groups rather than limiting membership to organizations in the northeastern states has been announced by

(Turn to POULTRY CO-OP, page 97)

HEW Appointment Generally Approved, But Still Fear of Political Move on FDA Jobs

By JOHN CIPPERLY
Feedstuffs Washington Correspondent

WASHINGTON—Announcement of the appointment of Gov. Abraham Ribicoff as Secretary of Health, Education and Welfare has failed to still some apprehension that the incoming Kennedy administration may use top jobs in the Food and Drug Administration as political plums.

The Ribicoff appointment has generally been received here with genuine bipartisan approval since the Connecticut governor, though a politician, has made an excellent record as a public administrator.

However, some observers say that the over-all HEW agency could be a place of patronage for the Democratic faithful, offering a temptation to the Kennedy organization to start

(Turn to HEW, page 101)

Purina Profit Up; Feed Unit Termed Above Average

ST. LOUIS — The Ralston Purina Co. this week reported that its earnings for the fiscal year ended Sept. 30 reached a new all-time high, although net sales were down somewhat from the preceding year. Officials termed the company's formula feed record "far more favorable than that of the feed industry as a whole."

Donald Danforth, chairman of the board, said net earnings for 1960 were $18,000,234 or $2.76 per share,

(Turn to PURINA, page 8)

To Cite Examples of Feed-Vet Cooperation

KANSAS CITY—Some examples of effective cooperation between feed man and veterinarian will be outlined in a talk by Dr. J. T. Tumlin, McMillen Feed Mills, Ft. Wayne, Ind., during the Midwest Veterinary Nutrition Conference in Kansas City, Dec. 12-13.

Means of working together at the "grass roots" in numerous instances have led to great benefits for farmer, feed man and veterinarian, and Dr. Tumlin plans to show what some of these special programs have accomplished.

The two-day meeting, designed to interest both feed men and veterinarians, is expected to draw about 300 persons from a six-state area of the Midwest. An imposing list of speakers has been drawn up, and the

(Turn to EXAMPLES, page 97)

Court Ruling Would Restrict FDA Actions

SYRACUSE, N.Y.—A federal district court in Syracuse has ruled against the government in a test case on the question of whether a food is within the jurisdiction of the Federal Food, Drug and Cosmetic Act when made from out-of-state ingredients but is not shipped out of the state where manufactured.

The Food and Drug Administration announced that because of the implications of the case to future enforcement actions and the fact that the ruling is not consistent with other court decisions on related questions,

(Turn to RULING, page 97)

Better Feed Demand Advances Prices of Several Ingredients

Oilseed meals, millfeeds and molasses were among the feed ingredients which gained in price this week as nippy weather and snowfall in many regions of the nation pushed up demand for formula feeds. In fact, the tone of the over-all ingredient market was improved, but not enough to result in much increase in manufactured feed prices.

Soybean meal trading was more brisk this week than seen for some

(Turn to FEED DEMAND, page 8)

Industry Economist Predicts

Distribution Patterns for Feed in the Years Ahead

CHICAGO — The crossroads ahead offer no clear signposts pointing toward correct management decisions for the future—but acceptance of the status quo will mean economic suicide.

These were among the observations made by an industry economist in taking a look at possible feed distribution patterns in the future.

While managerial decision-making will be difficult, certain general patterns in feed distribution are likely to develop. Observations and predictions on distribution patterns were presented by Dr. Claud L. Scroggs, director of economic research for Southern States Cooperative at a recent meeting of the American Feed Manufacturers Assn.'s market research committee.

Dr. Scroggs' discussion notes were distributed this week to AFMA mem-

(Turn to DISTRIBUTION, page 100)

Highlights of Observations and Predictions

- Distribution patterns of future already indicated by some pace-setters today—vary from region to region.
- Shift toward local mills of moderate size.
- For central mills, more concentrates and premixes.
- More on-the-farm mixing on larger, specialized farms, using premixes and concentrates.
- More bulk delivery directly to large producers.
- Fewer local outlets—will become farm or ranch "service centers."
- More feed "programs," including both purchasing and marketing services.
- Further expansion of vertical integration, especially in broilers, eggs and turkeys.
- Pricing and credit—"hazardous"—volume discounts more common; more incentives for cash purchases (will be charge for credit); feed bargaining groups will probably continue or develop in certain areas; continuation of unrealistic credit risks by some program initiators.
- Competition will be tougher—margins lower.
- Acceptance of status quo will mean economic suicide.

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EDITORIAL STAFF—George L. Gates, Editor; Roger Bergland, Managing Editor; Fred E. Tunks, News Editor; John Cipperly, Washington Correspondent; Emmet J. Hoffman, Merchandising Editor; James E. Sharon, James H. Ross, William A. Bentzin, James K. Ruiter and Russell Tokheim, Editorial Assistants.

WASHINGTON CORRESPONDENT—John Cipperly, 604 Hibbs Building, Washington, D. C., Telephone, Republic 7-8534.

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The regional circulation of this issue is concentrated in the northwestern states

Top of the Hopper

THE MOISTURE LEVEL of this year's corn crop continues to be a topic for feed men, with a number of them in the Midwest concluding that presence of a large quantity of wet corn is causing something of a slump in hog feed sales. Others have commented that the problem probably is largely one of large supplies, not necessarily high moisture supplies. Earlier it was felt that wet corn would be a problem, then it was concluded that the crop would be mostly harvested in good, dry condition. So the present observations appear to be somewhere in between.

More accurate information should be available soon, but meanwhile it is interesting to note that the government men charged with arranging price support storage are basing some of their storage need calculations on reports indicating that moisture content of the current crop is less than that of the 1959 crop, at least in some areas. "This may have considerable effect on the amount of corn which will be placed under price support," Harold Brightwell, grain program specialist of the Iowa Agricultural Stabilization and Conservation office, said at the Western Grain & Feed Assn. of Iowa convention.

WET OR DRY, feeding straight corn—without proper supplementation—is a costly procedure. Some feed men calculate that the return on corn with this sort of feeding is only about 45¢ bu.

ABOUT THE USUAL AMOUNT of feed is booked this year guaranteed against price decline, according to the observations of one sales executive. However, the amount booked in this way probably makes up a smaller percentage of all feeds booked, he believes, because total bookings are larger this year. One of the principles of the National Feed Merchandising Plan is aimed at minimizing against-decline bookings, which are considered unsound by most feed companies. The bigger volume of over-all bookings this year may be due to the attention called to bookings by the industry attempt to obtain voluntary agreement to handle them in a sounder way, this feed man feels. In other words, some companies which didn't book before because they hadn't thought about it especially have now heard more about this type of business and decided to give it a whirl, he thinks.

FOOD CHEMICAL NEWS reports that Food and Drug Administration officials will be pushing for an amendment to the Delaney clause to exempt feed additives which leave no residues in human food and which do not harm animals. What possible influences the successor to the Health, Education and Welfare's secretary's post (page 1) might have on FDAers' thinking and planning will be a matter of prime interest to feed men.

LOW SOYBEAN MEAL prices are raising heck with dairy feed sales of some manufacturers. Many dealers are pushing meal to customers rather than mixed dairy feeds because they feel they are giving them a bargain. Dealers who do this are being shortsighted, one manufacturer claims, because their longer range profit opportunities lie in keeping dairymen sold on formula supplements. Encouraging them to switch off such supplements when soybean meal slumps could create problems of reeducating them. He suggests that dealers need not be so quick to follow soy price declines in quoting to customers or necessarily call too much attention to the bargain.

(Turn to **TOP OF THE HOPPER**, page 97)

How's Business?

AN EVERY WEEK REVIEW OF FORMULA FEED BUSINESS VOLUME, INCLUDING PRICE, SUPPLY AND DEMAND TRENDS

Optimistic and firmer tone entered formula feed business this week. It was ushered in by a flash of real winter weather almost immediately reflected in improved demand for cattle and poultry feeds. Although ingredient prices showed a new firmness—gains were most noticeable in soybean oil meal and millfeeds—formula feed prices didn't undergo much change. An upward adjustment is expected, though, in the near future. Now that the weather, a bit milder later in the week than at the outset, has done its part, the only major factor holding back greatly improved formula feed sales is the abundance of cheap new corn. Some of this new corn, piled high in covered and uncovered cribs, is said to be in the "wet" classification. But it is believed that only corn picked especially early is in the distress stage and must be fed rather than stored. Cheap corn has had as much or more to do with the continued climb in the hog-corn ratio as a fairly good price for hogs. This week's hog-corn ratio, based on Chicago prices, was 19.6, a gain of .7 from the previous week and 7.2 better than during the comparable week last year. The wholesale feedstuff price index edged up to 70.6 this week. It was 70.3 a week earlier and 81.7 a year earlier. This week's feed-grain index of 56.6 is .8 higher than that of the week before, but under the index of 63.3 for the same week a year earlier. (Feed markets in detail on pages 98-100.)

Northwest

Colder temperatures and snowfall stimulated formula feed sales this week in the Northwest. Beef cattle have been herded into feedlots from grazing land and picked cornfields. Dairymen appear to be feeding their cows heavier. Farmers' layers aren't spending much time outdoors.

Manufacturers with integrated egg and broiler operations report good business in these two lines.

This is the first week that booked cattle feeds have been ordered out in any great volume.

Little change in hog feed volume was noted. Most of the market-weight hogs have gone to slaughter and the new crop of pigs has some growing to do before it'll completely replace the consumption of the previous hog generation.

Year-around turkey operations are keeping turkey feeds in the picture, but total sales are down in this post-Thanksgiving period. Turkey starter feeds have begun to make a stronger appearance, however.

Although this week's feed business is somewhat better than last week, the change has not been enough to rush manufacturers.

It is hoped that improved business brought on mostly by real winter weather is the beginning of a long-lived upward trend. A new year of laying and broiler flocks and hog farrowings should keep the ball rolling, but manufacturers hope the good prices of this year won't result in over-expansion and a price drop.

Central States

Continuing the moderate betterment that had its inception during the second week in November and was maintained through the third weekly period and into the final week of the month, manufacturers of commercial mixed feeds are expressing considerably more optimism over the situation than they have at any time recently. Full-time operation of their plants—in some instances running into a little overtime—appears to be the common story. Without question, inventories had been permitted to become badly depleted and had reached the point at which they could not become any lower.

The heavy feeding season is right around the corner and color has been lent to the growing belief that the bottom of the trough has now been scraped coincident with the sharp drop in temperatures and the typical blizzard conditions.

A number of operators are advising of a small, but nonetheless welcome backlog of orders on their books. The fact that they are rather uniformly for quick shipments indicates the extent to which inventories of interior dealers must have been whittled down.

Southwest

Formula feed business picked up somewhat from last week's holiday pace but still is not the heavy run hoped for. Most mills are operating on a five-day basis and hoping for improvement.

Ingredient prices, mainly soybean meal and millfeeds, worked sharply higher this week which will make for some upward adjustment in some formula feeds' price lists.

Open weather conditions have hampered the formula feed movement in the range country. Wheat fields were offering good grazing and local feed grains were reported plentiful in most areas. It is felt that a covering of snow would be the best stimulus to feed business.

Cattle feed is providing the big share of the output but some trade sources reported good movement of hog feeds and egg feeds.

South Central

Formula feed business showed a little improvement this week, mostly because of the time lost through last week's holiday closing, although the arrival of more wintry-like temperatures could also be a factor in pushing demand a little higher. Mill running time continues to fall in the five-day bracket, but schedules are a little more crowded than formerly and occasional periods of overtime are called for.

Pressure on ingredient prices exerted by wet corn marketings is dwindling away. Soybean meal moved upward this week, due not only to the recovery in cash corn values but also to the increased demand brought on by cold weather. Feed men are encouraged over the turn-around in prices. They think formula feed sales will increase whenever price lists reverse their downward trend and move upward.

Southeast

Formula feed business continues to be reported as being very good in the Southeast. Mill running time remains normal.

Many believe there will be further improvement in business because of colder weather.

North Georgia broiler prices dropped ½¢ this week, to 14½¢ lb.,

(Turn to **MARKETS**, page 103)

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Honeggers' & Co. Buys Winning Barrow At International

CHICAGO — Honeggers' & Co., Fairbury, Ill., paid a record $23 per pound for the winning barrow at the International Livestock Exposition here Nov. 30, it was announced. Total price paid for the champion by the firm's president, E. F. Dickey, was $4,715.

The nine-year-old girl owner and her 205 lb. Honeggers'-fed Hampshire barrow named "Reliable" had joined forces to break a number of exposition records. She was the youngest exhibitor at the show and won the highest swine award in her first time as an exhibitor.

Mr. Dickey immediately announced that the name of the pig had been changed to "Mr. Pig Popper" for the feed the animal was fed. He also announced that "Mr. Pig Popper" will be shown at a number of farm group meetings.

In purchasing the prize entry, Mr. Dickey said Honeggers' has tried to give real impetus to the movement for more youth activity in animal agriculture.

The owner, Colleen Rae Callahan, Milford, Ill., it was pointed out, won more than $5,000 at the show, including $350 in special awards, and has deposited the money in a bank for a college education fund.

The barrow was chosen champion of the breed and grand champion over more than 450 pigs which were exhibited in the open competition. The youthful owner brought five other pigs from the same litter of eight to the show. The performance duplicated one by the girl's father, Francis R. Callahan, in 1945, the first year he exhibited. Mr. Callahan is now a field representative with Union Stock Yard & Transit Co.

Grain Elevator Clinic Dec. 16 in Memphis

MEMPHIS, TENN.—A grain elevator management clinic will be conducted here Dec. 16, according to Henry K. Hoyt, Commodity Brokerage Co., who said that something novel will be offered interior grain elevator people of the mid-south agricultural area.

"In recent years there has been a definite shift toward increased grain production in this section of the country," said Mr. Hoyt, and it is with the thought that warehousemen should utilize their physical facilities to carry stored and hedged grain year after year in the same manner as has been done in older established territories, that Mr. Hoyt has invited 40-50 elevator managers to be his firm's guests at this clinic.

Guest speakers will be: John C. Whitsitt, vice president, First National Bank of Memphis, and the following officials of Lowell Hoit & Co., Chicago: Virgil A. Wiese, president; G. F. Klein, vice president, and Francis White, manager of Hoit's branch office in Carbondale, Ill.

These men will explain how large terminal and interior elevator firms make use of the Chicago futures markets to hedge and secure regular carrying charges on their grain. Various techniques incidental to warehousing operations that are necessary to proper financing of a grain elevator business will also be discussed.

CHICKEN WITH EVERY TANKFUL

ATLANTA — There may not be a chicken in every pot, but there can be one with every tank—of gas, that is. A gasoline station in Hapeville, an Atlanta suburb, has announced that it will give a free broiler with every 10 gal. or more of gasoline purchased.

Iowa State Meat Judging Team Wins $1,000 Pfizer Award

CHICAGO—An Iowa State University team won the $1,000 first prize offered by Chas. Pfizer & Co., Inc., in the intercollegiate meat judging contest at the International Livestock Exposition in Chicago.

The three-man Iowa State team, coached by Dr. E. A. Kline, topped 25 other competing college and university teams by ringing up 2,676 points out of a possible score of 3,000. The contest, now in its 31st year, is sponsored by the National Live Stock and Meat Board in cooperation with the International Livestock Exposition.

Pfizer also presented a $500 second place prize to the University of Wisconsin team coached by Dr. Ernest Briskey; and a $350 prize to the third place winner, Ohio State University, coached by B. D. VanStavern.

Checks were presented by Warren M. Reynolds, manager of the Pfizer agricultural research center, Terre Haute, Ind. The prize money will be used to finance meat research at the winning schools.

Leading his Oklahoma State University team into sixth place was Max Troub, Carnegie, Oklahoma. His 919 out of a possible 1,000 points surpassed the scores of 77 other contestants.

On the winning Iowa team were Gene Pitzen, Stacyville, Iowa; Marvin Walter, Watkins, Iowa, and John Besh, Geiger, Ala.

This is the fourth year that Pfizer has offered cash prizes in the contest, designed to give youths an opportunity to test their skills in judging cuts and carcasses of beef, pork and lamb for quality, texture, tenderness and palatability. Last year's $1,000 prize went to a team from Oklahoma State University.

Mr. Reynolds said Pfizer presents these annual cash awards because of its continuing interest in farm youth and the growth of agriculture, a field served by the firm as a leading manufacturer of feed supplement and animal health products.

Railroads Withdraw 3rd Transit Proposal

KANSAS CITY—It appears that the railroads' proposal for charging $1 ton for third transit will remain in a suspended state. The railroads have withdrawn their proposal and a hearing on the proposal set for Dec. 5 here has been cancelled, it was learned this week.

In its Oct. 21 announcement of Ex Parte No. 223 proceedings results, the ICC said it had suspended for further investigation the proposed third transit charge.

Fred Klatte with Veterinary Service, Inc.

MODESTO, CAL. — Fred Klatte, formerly associated with the animal nutrition department of Commercial Solvents Corp., is now with Veterinary Service, Inc., of Modesto, Cal., as southern California sales representative. He represents the firm's line of feed additives and poultry and animal health products. Mr. Klatte did undergraduate work at University of Connecticut, and received his master's degree in animal husbandry at Rutgers University.

Fred Klatte

Veterinary Service, Inc., is statewide distributor for the new tissue culture Newcastle vaccine manufactured by Poultry Health Laboratories of Davis, Cal.

Feed Men Comment on Group Buying; Said to Have Spread Some in California

FRESNO, CAL. — Group specification buying of poultry feeds at a certain margin over ingredient costs —this is a practice which continues to be both cursed and defended. The system apparently has not expanded rapidly, but there are indications that it has spread into at least some other California sections from the southern California area where it started and where it now accounts for a large amount of the layer and flock replacement feed volume.

In southern California there are now said to be some 20 groups of large commercial producers which buy feed on formula specifications at a bulk delivered cost of around $5 to $6 per ton over ingredient costs quoted weekly by the federal market news service.

Some persons say that the practice has resulted in deterioration of feed industry profits and operations and has not actually benefited producers in the ways or to the extent claimed. Others, including those in or close to this type of program, say that the practice has resulted in more profits to producers and that at least some feed firms have been able to operate this type of business profitably. Some contend that the quality of the feed going to producers in the buying groups may be lower than that of other, branded feeds. Others say that good ingredients are used, that quality is maintained and that producers are getting good results.

At any rate, group buying on a bid basis is a significant factor in the California feed and poultry industries, and some say that the practice has gained to some extent and that it may move eventually into other regions. Others will argue to the contrary, however.

Comments on developments in group buying and production of feed for the groups were heard in informal conversations among feed and ingredient people at the California Animal Industry Conference in Fresno. Feed men in other regions will be among those interested in some of the views.

In Other Areas

Reports indicated that the practice has moved up from its starting point in southern California through parts of the San Joaquin Valley. Groups at Visalia, Turlock and Santa Rosa were mentioned.

Some have contended that the group buying trend is slowing in some areas because of unfavorable results. Others say that if there has been a slow-down or halt in an area, it is because the existing groups will not let other producers in; they are said not to want competing producers in their area to get in on the claimed lower costs of production.

Group buying is found to some extent in dairy feeds, it is indicated, but not so much as in poultry feeds in the Los Angeles area.

Some reports indicate that about half of the large tonnage of chick starter and grower and laying mash made and used annually from the Los Angeles area south in California is sold to buying groups. The feed is supplied primarily by large independent feed mills.

The groups are made up of large independent poultrymen, each producer using from 500 to 1200 or 1500 tons of feed per year, according to industry reports. Each group might have some 40 or 50 members, and each producer might have 10,000 or more layers plus replacement birds. The annual tonnage accounted for by a group could get up to 30,000 to 50,000. Each mill which bids on and obtains some of the business would likely be serving from two to four groups.

The mills bid on an annual basis on production of feed according to formulas supplied by the groups. The feed is then made and delivered at a cost of around $5 to $6 per ton over bulk ingredient prices quoted weekly. The feed is priced each Friday for the following week.

The price of feed to producers, according to some sources, runs about $2.50 to $2.75 cwt., delivered in bulk to the ranch. Payment terms are 10 days or two weeks. For the feed manufacturer, it was pointed out, there are no credit losses, no bad debts, and this was said to be one of the factors making possible the low margins. The members may pay a $2 per ton override; this is to provide a fund to assure payment to the mill in case some individual in the group is unable to pay for his feed.

The group organizations do not carry out marketing activities; the large producers sell their eggs to processors who serve the huge southern California market.

A large share of the tonnage of feed mills serving buying groups is accounted for by these groups' purchases, reports indicated.

Because of the low margins on the feed for groups and because of the competitive conditions in the area, prices on branded feed also are reported low.

Observers say that a major factor in the group buying-industry systems which exist is the large concentrations of large growers who may be served more economically than producers in other areas. Generally the producers in groups may be within a 50-mile radius of a mill.

Extension men were said to have been responsible in considerable measure for the initial programs, and college formulas have been used for the feeds. Now, however, premix suppliers are reported to be key parts of group buying programs. The groups specify use of certain premixes and formulas.

Spread of and interest in the programs were attributed to a large extent to publication by extension services of cost records of producers in buying groups. Now, however, some sources say that for various reasons there is less or no promotion of the idea.

Among the feed organizations adversely affected by the programs, it was reported, are conventional farmer cooperatives. In some places, feed men said, producers have left cooperatives in favor of the buying groups.

No Integration

Another observation was that there is no integration of feed-producing-marketing as in some other areas.

How are the mills which serve buying groups able to stay in business and presumably make a profit on the extremely low margins which are charged? As one might expect, opinions on this vary.

Some cite such things as no sales costs, no credit costs, no free service, no research, low overhead, etc. Also, they say that the mills must be completely automated, must be operated extremely efficiently by competent workmen, and are likely to run for at least 16 hours per day. Some persons claim that feed can be made and delivered with labor of about 1.5 manhours per ton, including receiving, production, maintenance and delivery.

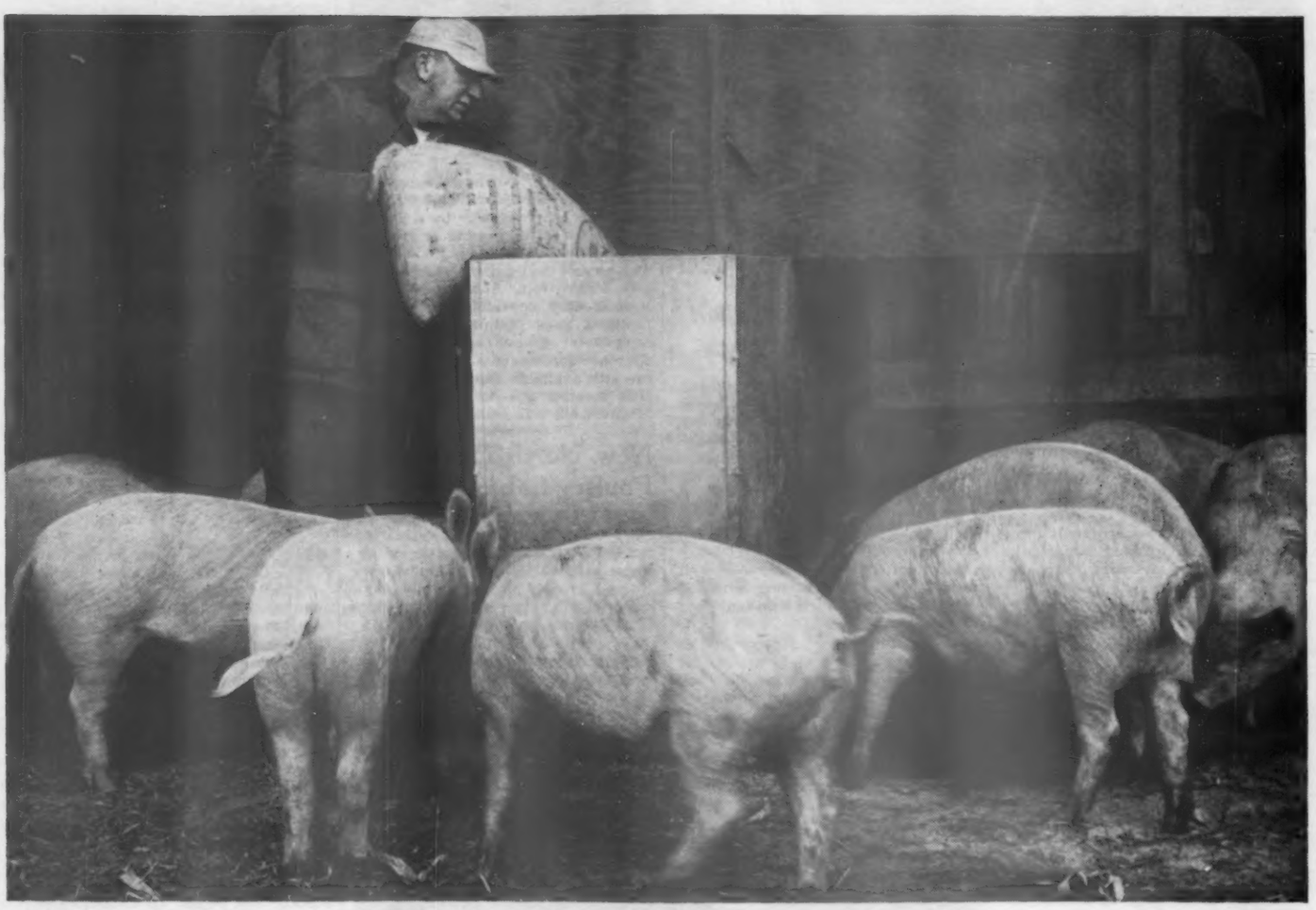
In this connection, some observers say that close management of transportation is a key point, with the plants as much in the transportation business as in the feed business. Trucks must be kept on the move constantly, starting very early to deliver feed to the more distant points. In fact, some say, there is a tendency to reach out to greater distances in order to operate the trucks and plants for more hours.

If service work in flocks is required, a charge of $2.75 to $3 per hour is made for the serviceman's work.

The going labor rates in mills serving the buying groups are said to be around $2.75 per hour, including

(Turn to GROUP BUYING, page 97)

ARE YOU GETTING YOUR DOLLAR'S WORTH OF SCOURS PROTECTION?



There are several products that will help prevent or treat outbreaks of scours (bacterial swine enteritis).

But, in all but one, the ratio between cost and effectiveness is out of line. The single exception is PRO-STREP.

PRO-STREP, an effective combination of penicillin and streptomycin, will help prevent scours at a lower cost than any other single antibiotic—narrow- *or* broad-spectrum! And, that's not all. PRO-STREP also helps stimulate appetites, promote growth and improve feed efficiency.

University tests have repeatedly demonstrated the value of a combination of penicillin and streptomycin in fortifying swine rations. The majority of published reports on this combination have been based on PRO-STREP.

That's why more and more progressive feed mills throughout the country are switching to PRO-STREP. What they want is what you want . . . an effective combination of antibiotics that can promote growth and help prevent "necro" at a lower unit cost. Merck Chemical Division, Merck & Co., Inc., Rahway, New Jersey.

The Best Antibiotic Combination... **PRO-STREP®** MERCK

Penicillin and Streptomycin

Rules, Regulations, 'Rithmetic Covered by Western Panel

By GEORGE L. GATES
Editor of Feedstuffs

DES MOINES—The assortment of interests and problems which occupy the working hours of today's busy grain and feed men was well-illustrated by the "open discussion" panel conducted at the Western Grain & Feed Association of Iowa convention.

Together with another panel session immediately following on government grain storage (Feedstuffs, Nov. 26, page 1), the discussion called attention to the extent that dealing with government regulations and programs get mixed up with the "normal" functions of running a business. Other talks dealt with vitamin A deficiency in cattle and feed mill accounting practices.

Participants were John Bogle, Food and Drug Administration inspector; Fred Ludemann, Wage and Hour Division of the U.S. Department of Labor; Delbert Dempewolf, grain inspector at the Des Moines Grain Exchange; Dr. Charles Summers, Iowa State University animal husbandry department, and Victor Spindler, Mason City, Iowa, accountant.

FDA is attempting to provide more uniform coverage of all fields it works with, Mr. Bogle said. He noted that the agency is "closing in on other businesses, too."

This was his response to a question from the floor: "What's the purpose of the sudden army of inspectors closing in on grain and feed dealers?"

Mr. Bogle reported that grain dealers have made great progress in wheat sanitation following closer attention to this matter in the past several years. "Our primary concern is to protect the consumer," he said.

He listed a number of things being checked in feed mills by FDA inspectors, including these:

Storage of drug materials. They should be in closed containers, preferably in their original containers. If changed, they should be properly labeled. Records should be kept of drugs used.

Adherence to provisions of new drug applications.

Inspection of equipment. It must mix uniformly, and be cleaned thoroughly after mixing of medicated

(Turn to PANEL, page 102)

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Iowa Feed Men Given Tips On Boosting Sales, Profits

DES MOINES — Projecting sound business sense into improved profits in the coming year occupied the attention of close to 1,000 industry members who attended the Western Grain & Feed Assn. of Iowa convention at Hotel Ft. Des Moines Nov. 21-22.

Speakers described programs proven to be useful in strengthening sales and service, and members of one discussion panel provided a long-range outlook for grain storage prospects, also closely tied to the feed-grain men's profit probabilities (Feedstuffs, Nov. 26).

Summaries of talks dealing with sales, business management and other topics follow:

WHAT IT TAKES TO BE A SUCCESSFUL RETAIL FEED SALESMAN—"Service has become increasingly important in this business," said B. C. Swanson, owner of Swanson Elevator in New Sharon, Iowa. "Because of this service which has been offered by the better feed dealers, most livestock feeders have come to expect more help in return for their business.

"This, of course, is a very good thing for the feed business. It makes it impossible for the uninformed, poorly qualified and financed, inefficient feed salesman to operate very long in the market."

Mr. Swanson reported that to earn a good margin of profit today, companies must have someone out in the feedlots working closely with farmer customers. "If the business is too big to allow the owner to make regular calls, then it faces the difficult task of hiring the 'right' outside sales and service man."

Mr. Swanson suggests these points to help get the new salesman off to a good start: First, choose the best qualified man for the job; next, start him off on a training program (the salesman should know thoroughly every feeding program available for all classes of livestock). Estimate and study the market potentials (a survey can be used advantageously here), and instruct him in organizing and conducting meetings and field days.

"The degree of organization of any outside selling program is primarily determined by the extent to which the program has been supervised," said Mr. Swanson. "Some organized, outside salesmen are self-starters enough to handle the job alone, but they are few and far between—and these men could be many times as profitable if they were properly supervised.

"The proper supervision of the organized outside selling program revolves around two things: (1) The determination of the dealer to keep it organized, and (2) the proper use of records or tools which help him keep it organized."

One example Mr. Swanson used of records that are vital to an outside salesman includes the name, location and animal and poultry population of every farm along a route.

Also, a highly successful service performed by an outside salesman involves the figuring of feed costs for farmers, said Mr. Swanson.

"Really, few feeders actually know what it is costing them to produce

(Turn to IOWA, page 102)

MODELS—Joyce Blann and Becky Cunningham, pictured here, are two of several models who will feature furs, fashions and gift ideas at a ladies' luncheon at the Midwest Veterinary Nutrition Conference in Kansas City. The luncheon, for wives of feed men and veterinarians attending the conference, will be Monday, Dec. 12, at the Continental Hotel. The luncheon program will be a special feature for ladies present at the conference Dec. 12-13 at the Continental. The models will feature clothing and gift ideas from Adler's, a leading Kansas City department store. The Midwest Feed Manufacturers Assn., a sponsor of the conference, notes that hotel rooms for the conference are still available, but it is suggested that reservations be phoned to the Midwest office in Kansas City.

New North Carolina Poultry Labs Operating

RALEIGH, N.C.—According to Dr. H. J. Rollins, state veterinarian, three new poultry diagnostic laboratories are now being operated by the North Carolina Department of Agriculture. They are located at Rose Hill, Robbins and Murphy.

As previously reported, the 1959 legislature made appropriations for equipment, personnel and operating expenses for these laboratories, subject to land and buildings being furnished by the counties or communities in which they are located.

PELLETING CO-OP FORMED

ELTOPIA, WASH.—Articles of incorporation have been filed by the Hope Valley Pelleting Cooperative.

AWARD WINNER—For outstanding service to the nation's animal agriculture, Wilbur H. Bruner (center), extension specialist in animal science at Ohio State University, received the 1960 Animal Production Extension Award (Feedstuffs, Nov. 26) made annually by Chas. Pfizer & Co., Inc. Making the presentation in Chicago was Dr. Herbert G. Luther (left), scientific director of animal health and nutrition for Pfizer. At right is Dr. W. P. Garrigus, head of the animal science department, University of Kentucky, and chairman of the extension award selection committee for the American Society of Animal Production. Mr. Bruner received a $1,000 award.

Southern States Buys Carter-Venable Co.

RICHMOND, VA.—Southern States Cooperative has purchased Carter-Venable Co., feed manufacturer and seed and feed distributor, according to a joint announcement by E. M. Eppes, co-owner of Carter-Venable, and officials of Southern States. The purchase price was not revealed.

According to Mr. Eppes, he and his son, Edward M. Eppes III, decided to sell the business "in view of my age and long tenure in the business and my son's desire to practice medicine."

The Carter-Venable concern was organized in 1911. It has annual sales of about $2 million. Southern States, one of the nation's biggest farm cooperative organizations, grossed approximately $203 million last year.

A spokesman said all Carter-Venable facilities will be operated as direct branches of Southern States. The approximately 40 Carter-Venable employees have been offered jobs with Southern States.

Included in the sale were Carter-Venable's 46,000 sq. ft. warehouse and headquarters, two local branch stores and a third branch at Tappahannock.

Allied Mills Post to Norman R. Clizer

CHICAGO—E. D. Griffin, vice president and general sales manager, Allied Mills, Inc., announces the appointment of Norman R. Clizer as poultry feed sales coordinator with headquarters in the Chicago office.

Norman R. Clizer

Mr. Clizer comes to Allied Mills, Inc., with a background of 12 years in the feed business. In his previous experience, he served as a salesman in Missouri and Arkansas, and later on the management team of another feed company. Prior to entering the feed business, he was extension poultryman at the University of Missouri.

With Allied Mills, Mr. Clizer will coordinate work between sales in the field and various departments of the home office in Chicago.

Cattle Shipments Up 16% in October

WASHINGTON — Shipments of stocker and feeder cattle and calves into eight North Central states during October totaled about 1.3 million head, compared with 1.1 million the same month a year earlier, for an increase of 16%, according to the U.S. Department of Agriculture.

USDA also reports that movement of stocker and feeder sheep and lambs into those states was up 18% from a year earlier.

Of the total cattle and calves received in those states, 365,000 head moved through public stockyards and 954,000 were received direct. The direct movement was 72% of the total this October compared with 65% a year earlier.

Combined July-October shipments this year amounted to 2.7 million head, only slightly below the 2.8 million head for the period in 1959.

Stocker and feeder sheep and lamb numbers for October came to 616,000 head, 185,000 through public markets and 431,000 direct. The direct movement accounted for 70% of the total, about the same as a year earlier, USDA said.

During the July-October period this year 2 million head were shipped into the eight states compared with 1.7 million head in the period a year earlier.

Larro Sales Executives Change Positions

MINNEAPOLIS—Changes in position for two Larro Feed Division executives have been announced by E. E. Woolley, company vice president and general manager of the Larro Feed Division of General Mills, Inc.

E. J. Slevin has been appointed director of sales for the feed division to succeed Howard Herron, who will become general sales manager for the Sperry Feed Operations.

Mr. Slevin started with General Mills in 1942 and has held several assignments with the Sperry Feed Operations the latest being general sales manager.

Mr. Herron has been with General Mills for almost 30 years, serving in various sales positions. Much of his experience was on the West Coast. He has been director of sales for the Larro Feed Division for 5½ years.

Condemnations Topic For Southeast Event

AUBURN, ALA.—A regional meeting to discuss the condemnation problem is to be held here Dec. 5-6, according to Worth Lanier, chairman of the Auburn Planning Committee.

Attending the meeting will be representatives of the state poultry associations, state commissioners of agriculture and directors of experiment stations from the Southeast. The marketing service has also been asked to send representatives.

"It appears that now is the time to take a collective look at the results of our research, education and action programs and on the basis of our joint conclusions, develop a regional plan of action aimed at lessening condemnation losses," Mr. Lanier said.

Chicago Party Offers Top Entertainment

CHICAGO—"One of the most outstanding shows ever seen in the feed industry" has been announced for the annual Christmas party of the Chicago Feed Club. The entertainment program is set for the evening of Dec. 12 at the Illinois Athletic Club, 112 S. Michigan Ave., Chicago. The party will get under way with a 6 p.m. social hour, followed by dinner at 7:00 and the show at 8:30.

Drawing from some of the top show business talent, the show will include Chuck Cavallo and his orchestra, now appearing at Chicago's Pump Room; the Ivy Five, a group of nationally known recording artists—three men and two girls; Tony Marks, a magician-comedian; Lucile Napoli, singer and dancer; Jodie Gray, marimba instrumentalist, plus Lenny Collyer, young comedian.

The officers of the Chicago Feed Club promise members and their guests they will spend a delightful evening.

TOP ENTERTAINMENT—A real show-stopper, Jodie Gray, will perform on the marimba during the annual Christmas party of the Chicago Feed Club. A capacity audience is expected to watch her and other acts in the show.

Commercial Solvents Names John Recker

ST. LOUIS—Commercial Solvents Corp. has named John Recker midwest district manager, animal nutrition department, according to an announcement by I. Roy Cohen, sales manager of the department.

John Recker

He will make his headquarters at the St. Louis, Mo., office of the company. His territory will include 16 states, and salesmen in the area are: L. C. Hastings, Minneapolis; R. J. Mitchell, Park Ridge, Ill.; Walter R. Tait, St. Louis; Donald T. Lyons, Prairie Village, Kansas; William J. Milstead, Jackson, Miss.; R. L. Burroff, Dallas, Texas.

Mr. Recker has been associated with the feed ingredients industry for 13 years, and for the past four years has been with Commercial Solvents Corp. in Iowa.

The new position for Mr. Recker is part of an expanded marketing program for Baciferm (zinc bacitracin) antibiotic, Mr. Cohen said.

Oilseed Meal Futures Show Irregular Trend

MEMPHIS, TENN.—Prices of oilseed meal futures wove an irregular pattern on the Memphis Board of Trade the past week, compared with a week earlier.

Soybean oil meal contracts swept upward fractionally, mainly because of the weakness of soybean oil late in the period. Cash demand for soybean oil meal was termed by dealers as only fair.

Lower futures board prices were experienced in cottonseed oil meal because of the light business in the cash article.

Meantime, mixed feed business was said to continue just fair. However, the trade expects a good upturn with the advent of cold weather over the U.S.

Most oilseed meal business on the cash market was for immediate delivery. Dealers said a premium is being asked for future months, but few buyers are paying it.

Eastern Trunk Line soybean oil meal closed Nov. 29 unchanged, compared with a week earlier; unrestricted soybean oil meal was 25@75¢ ton higher, and bulk solvent cottonseed oil meal was 25@50¢ lower.

Bonds for Poultry Facilities Approved

WALDRON, ARK.—Scott County voters overwhelmingly approved two industrial bond issues totaling $500,000 for construction of a hatchery and processing plant to be leased to Arkansas Valley Industries, Inc., in Dardanelle, Ark.

Officials said AVI is expected to invest about $500,000 more in the plants.

Some 250 persons will be employed at the processing plant. The hatchery will have about 25 employees. AVI officials said about 375 persons could be used by both plants when they are operating at peak production.

The new plants are seen as another step in a large expansion by AVI. On Dec. 28, Dardanelle residents will be asked to approve a bond issue to purchase the Fox DeLuxe Processing plant for lease to AVI.

Production Manager

COLUMBUS, OHIO—Earl C. Remen has been employed as manager of feed manufacturing for the Landmark Farm Bureau Cooperative Assn. He formerly was with the Pillsbury Co.

RESEARCH AWARD PRESENTATION—Dr. B. Connor Johnson (center), University of Illinois biochemist, is pictured here receiving the 1960 AFMA $1,000 award for the most outstanding contribution to animal nutrition research. Selection was made by the American Society of Animal Production awards committee of which Dr. O. Burr Ross (right), head of the department of animal science, University of Illinois, was chairman. Presenting the award at the 52nd annual meeting of the society is W. T. Diamond, AFMA secretary-treasurer.

AFMA Research Award to Illinois' Dr. B. C. Johnson

CHICAGO—Dr. B. Connor Johnson, professor of animal biochemistry, University of Illinois, has been selected by the American Society of Animal Production to receive the American Feed Manufacturers Assn. $1,000 award as the outstanding research worker in animal science for 1960.

Dr. Johnson was given the honor during the society's 52nd annual meeting at Hotel Sherman, Chicago, Nov. 25-26. Presentation of the award was made by W. T. Diamond, AFMA secretary. The event took place at the society's Friday evening banquet, attended by more than 1,000 researchers and scientists from the U.S. and several foreign countries.

Between 1957 and 1959, Dr. Johnson authored or was co-author of 37 research papers published in eight scientific journals in this country and several foreign countries. His work covered a wide range of subjects on nutrition and biochemistry including vitamin deficiencies for calves, effect of antibiotics on the intestinal synthesis of vitamins, vitamin B_{12} metabolism and function, nutritional role of antioxidants and other chemical compounds, and many other topics.

Dr. Johnson was born in Regina, Saskatchewan, Canada. He attended McMaster University in Ontario where he was awarded a B.A. degree in organic chemistry and a M.S. degree. His Ph.D. degree in biochemistry was conferred by the University of Wisconsin. From 1940 to 1942, he served as a postdoctoral fellow at the University of Illinois. The next year he was employed by a west coast firm as a research biochemist. He returned to the University of Illinois thereafter as a member of the department of animal science.

He is the 13th member of the American Society of Animal Production to receive the AFMA award since 1948. Previous winners were: Dr. Allen D. Tillman, Oklahoma State University (1959); Dr. Orville G. Bentley, South Dakota State College (1958); Dr. Donald E. Becker, University of Illinois (1957); Dr. Richard W. Luecke, Michigan State University (1956); Dr. Lester E. Hanson, University of Minnesota (1955); Dr. Wise Burroughs, Iowa State University (1954); Dr. Damon V. Catron, Iowa State University (1953); Dr. William Malcolm Beeson, Purdue University (1952); Dr. Lorin E. Harris, Utah State Agricultural College (1951); Dr. John K. Loosli, Cornell University (1950); Dr. J. L. Krider, University of Illinois (1949), and Dr. E. W. Crampton, McGill University, Quebec, Canada (1948).

Each year, AFMA provides three $1,000 awards to outstanding men of science. Previous winners this year were: Dr. W. A. Hardison, Virginia Polytechnic Institute, selected by the American Dairy Science Assn. at its meeting in Logan, Utah, June 19-22; and Dr. F. Howard Kratzer, University of California, selected by the Poultry Science Assn. at its meeting in Davis, Cal., Aug. 2-5. All three scientists will be given additional recognition at the 53rd annual convention of AFMA in Chicago May 8-10, 1961.

FEED MARKETING SEMINAR PROCEEDINGS AVAILABLE

CHICAGO—The views of industry leaders on some of the most important developments and problems in feed marketing and distribution are now available in the form of the published proceedings of the second annual Feed Marketing Seminar sponsored by the American Feed Manufacturers Assn. The booklet contains the texts of all of the talks presented at the seminar this fall. The discussions deal with things of importance to feed manufacturers both now and in the future.

Industry leaders and others cover such subjects as feed booking, uniform sales contract, credit, sales training, effective use of sales manpower, product complaint and creative selling. Also, the authorities take a look at likely developments between now and 1970, dealing with such things as the place of dealers, sale of complete feeds vs. concentrates, whether feed firms will be exclusively in feed manufacturing, the size of firms and plants.

The Marketing Seminar Proceedings are available to non-members of AFMA at a cost of $1 per copy. Orders should be sent to American Feed Manufacturers Assn., 53 W. Jackson Blvd., Chicago 4, Ill. (AFMA members have been notified of the availability of the proceedings.)

Observer Predicts Long-Term Gains in Soybean Meal Prices

MINNEAPOLIS — Soybean meal prices, rebounding this week from lows equal to post-war levels, have a good chance of gaining and maintaining strength until the 1961 crop of soybeans is ready for harvest. This outlook came this week from L. R. Brewster, manager, operations control, oilseeds division, General Mills, Inc., Minneapolis.

He relates that reports indicate soybean plants are shutting down for various lengths of time from one day to one week.

"From all indications, the November crush will be about 1½ million bushels less than October—which means less soybean meal," Mr. Brewster notes. "Soybean meal stocks as of Oct. 31, 1960, were reported at 91,700 tons—not a real burdensome inventory when you consider that it takes about 50,000 tons to fill the pipelines and is usually a minimum inventory even with a real tight meal market."

Weather Major Factor

Until this week of colder temperatures, light to heavy snowfall and strong winds, weather, throughout the country, Mr. Brewster said, "has not particularly favored heavy formula feed usage, and yet, soybean meal usage has been good because it has been priced so low." He believes that when winter weather solidly sets in, soybean meal will likely become a scarce item "and prices will up at least $5-10 ton."

Mr. Brewster says the recent report of the American Feed Manufacturers Assn. feed survey committee should be kept in mind. That report estimated 1961 increases in pigs, beef cattle, turkeys and broilers, and a slight decrease in layers. "Increased animal units are bound to increase demand for formula feeds—thus soybean meal," he observes. "This factor will eventually increase the value of soybean meal."

Mr. Brewster says soybean oil appears to retain good demand—and primarily because of a lower oil yield per bushel of soybeans this year and a potentially lower rate of crush—oil "should continue to command a price in the neighbhood of 10¢ lb."

Crush Comparison

The October, 1960, crush of soybeans has been reported at 35,563,000 bu. slightly more than the October, 1959, crush of 35,364,000 bu. "However," Mr. Brewster notes, "the gross margins in October, 1960, were 13¢ vs. October, 1959, gross margins of 27¢. With margins this low, processors will be reducing their crush much earlier this year than a year ago. Therefore, I am estimating lower total crush for this crop year than last (380 million vs. 392 million bushels)."

He notes that soybean exports after the first seven weeks of the new crop year are 6½ million bushels ahead of the record pace of last year which wound up over 142 million bushels.

"This trend will likely continue until all of the usage factors begin to make it even more obvious that beans will be in short supply by the time next summer arrives," Mr. Brewster says. "At that time, exports will likely slow somewhat because of higher prices for beans. You may want to change these usage figures around based on your own thinking, but if you do I'm certain you will wind up with something less than the 16.4 million-bushel carryover estimated."

Distribution Changes Announced by Firm

NEW YORK—Two changes in the distribution of Fleischmann's FIDY irradiated dry yeast and Fleischmann's active dry yeast type LS have been announced by Ray Green, sales manager, agricultural department, Standard Brands, Inc.

Braun-Knecht-Heimann Co., division of Van Waters & Rogers, Inc., Denver, will handle sales in the intermountain area, and Van Waters & Rogers, Inc., at Dallas and Houston will distribute the products in the Southwest.

Since 1941, V. W. & R. has been distributing irradiated dry yeast and active dry yeast to the feed trade on the West Coast for Standard Brands.

CHANGE OF ADDRESS

TAMPA, FLA.—The E. A. Carter Brokerage Co. here announced that its new address is 3418 Swann Ave., Office No. 5, Tampa 9, Fla.

FEED DEMAND

(Continued from page 1)

time. Crushings for oil have been reduced. Observers say some soybean processing plants are shutting down for various lengths of time (see story on page 8). It appears that this week began an upturn in soybean meal prices that have been the lowest in many years. Gains of around $1 ton were reported in some markets.

Increased demand and shorter supplies because of reduced flour mill output have pushed millfeed prices upward. The table of average U.S. bulk prices for the week ended Nov. 29 (below) doesn't show the extent of the late price development which increased values of bran, middlings and red dog around $3 ton in flour milling centers.

Molasses gained $1 ton this week—this time more because of greater demand than the sugar fuss in Cuba.

Average Bulk Prices and Index of Weighted Prices*

(Dollars per ton)

	Nov. 29, 1960	Nov. 22, 1960	Change from previous week
OILSEED MEALS			
Prices at prin. mkts.:			
Soybean meal	53.35	53.10	+ .25
Cottonseed meal	57.65	56.95	+ .70
Linseed meal	62.05	61.95	+ .10
Copra cake or meal	57.50	57.50	...
Peanut meal	51.50	53.00	—1.50
Index	71.8	71.3	+ .5
ANIMAL PROTEIN FEEDS			
Prices at prin. mkts.:			
Meat meal	65.55	66.55	—1.00
Tankage	66.10	66.15	— .05
Fish meal	87.75	88.50	— .75
Index	61.0	61.7	— .7
GRAIN HIGH-PROTEIN FEEDS			
Prices at prin. mkts.:			
Gluten feed and meal	46.45	46.45	...
Dist. dried grains	59.60	59.10	+ .50
Brewers dried grains	50.85	50.50	+ .35
Index	76.7	76.5	+ .2
WHEAT MILLFEEDS			
Prices at prin. mkts.:			
Bran	37.45	37.10	+ .35
Midds. and shorts	37.95	38.55	— .60
Index	68.1	68.3	— .2
OTHER MILLFEEDS			
Prices at prin. mkts.:			
Hominy feed	40.55	39.30	+1.25
Rice bran	28.50	28.75	— .25
Index	62.1	60.5	+1.6
ALFALFA MEAL			
Prices at prin. mkts.	51.45	51.40	+ .05
Index	99.0	98.9	+ .1
MOLASSES, FEEDING			
Prices at prin. mkts.	25.60	25.49	+ .11
Index	76.2	75.9	+ .3
ALL FEEDSTUFFS			
Index	70.6	70.3	+ .3
FEED GRAINS			
Prices at prin. mkts.:			
Corn	34.20	33.40	+ .80
Oats	41.80	42.10	— .30
Barley	40.90	41.20	— .30
Grain sorghums	33.70	33.60	+ .10
Index	56.6	55.8	+ .8

*Base period of index is 1947-49.
Source: USDA.

National Feed Show Set for May 7-10 at Conrad Hilton, Chicago

MILWAUKEE—Plans for the National Feed Show, May 7-10, 1961, at the Conrad Hilton Hotel, Chicago, are progressing rapidly, according to Eldon H. Roesler, manager. All former exhibitors have now had a chance to exercise their priority on space, Mr. Roesler said, and indications are for a "big show."

A small amount of space was not picked up, and this is now being offered to first-time exhibitors. Space released was made available by firms which may have gone out of business since 1959 or which require smaller exhibit areas because of mergers with other firms.

Interest is expected to be high since the feed show is combined with the annual convention of the American Feed Manufacturers Assn. In 1959, this dual event attracted almost 4,000 persons.

Indications are that many new, smaller feed plants will be built in the next five years and many who attend the show will be planning expansion along these lines, Mr. Roesler said. As a result, they will be discussing their plans with equipment firms and ingredient suppliers, making the show a "fertile field for present and future business."

Details regarding the show and available floor plans may be had by contacting Eldon H. Roesler, manager, National Feed Show, 1712 West St. Paul Ave., Milwaukee 3, Wis.

Egg Marketing Unit To Open in Florida

TAMPA, FLA. — Florida's newest egg marketing cooperative, the Florida Fresh Egg Producers, serving west coast producers, will begin marketing eggs Dec. 15.

The cooperative has obtained a warehouse here with coolers, and washers and graders are ordered. A manager is assuming his duties, trucking facilities for the movement of eggs have been lined us, retail customers have been contacted, financing has been arranged and more poultrymen are joining the organization through purchase of stock, officials said.

Veasy Nelson, for nine years in charge of egg handling and marketing, has resigned his position with the Jackson Grain Co. egg marketing operation to accept the position as manager of the new cooperative.

An early report said that the cooperative had 25 egg producers with about 193,000 layers signed up to consign about 1,300 cases of eggs weekly. However, T. P. Browder, Tampa, president of the cooperative, said that he and other directors have lined up additional producers and egg commitments since that report was completed.

In its story about the new venture, the Tampa Tribune said, "Privately, most of the feed companies now marketing eggs from poultry farms which purchase their feed admit they would be glad to get out of the 'egg deal' and pleased to see a successful egg marketing cooperative move in."

PURINA

(Continued from page 1)

compared with 1959's profits of $17,784,368 or $2.74 per share.

Net sales for the latest year came to $510,268,700, off from the $530,571,672 in sales reported for 1959.

Mr. Danforth noted that 1960 was the third consecutive year that Purina's earnings gained a higher level.

Feed Sales

Purina's 1960 annual report notes that feed sales "held up well in spite of generally unfavorable economic conditions in the poultry and livestock industries during much of the year." The report did not show a comparison of feed tonnage for 1959 and 1960.

"The fourth quarter showed a splendid recovery, with earnings of 75¢ per share, as compared with 44¢ for the same period last year," Mr. Danforth said in the annual report. "These are net earnings after all inventories have been written down to the Sept. 30 market, and adequate reserves set up according to our customary conservative procedure."

Mr. Danforth said Purina's Chow (feed) division continues to be the largest and most important division of the company, but added that other divisions "are now showing equal or greater growth, and are contributing very substantially to total profits. This broadening of our base through diversification has added both strength and stability to our business."

The Ralston division, the report says, "continued its rapid growth, reaching new highs in volume and profits during the past year." Dollar volume was up 20% over a year ago. The division includes the production and marketing of cereals and dog food through grocery stores.

Sales in the sanitation and farm supply division "were down during part of the year," the report says, "due to less favorable conditions in the hog and poultry industries. But by year-end, the trend was up again."

The report noted that Purina's grain merchandising division, "while not as profitable as last year, has moved ahead aggressively" by purchasing a 4-million-bushel elevator in Kansas City and leasing a 2,450,000 bu. elevator in St. Louis.

Purina, the second largest processor of soybeans in the world, said profits in its soybean division were "squeezed" by "the relatively high government support price coupled with a low world demand for soybean oil and meal." The report said the company has "faith in the future of this basic industry" and is "making a strong beginning with new Special Soy Products, expanding sales month by month."

About the company's manufacturing division, the report said Purina has been able to reduce in the past 10 years its manufacturing cost per ton and man-hours per ton "by continuously modernizing and improving the efficiency of our plants."

Purina's International Division continues to grow in volume and profits, according to company officials. The division showed a sales increase of 31% over last year in Latin America. "Our new French operations during the first nine months have been most encouraging," the report said.

"The results of the year prove the wisdom of our program of greater diversification," Mr. Danforth said. "It is a justification of the courage management has shown in making heavy expenditures in new plant facilities and in launching new products."

Financial Highlights

Ralston Purina Co. and Domestic and Canadian Subsidiaries Consolidated				
Year ended Sept. 30	1960	Per share	1959	Per share
Net sales	$510,268,700		$530,571,672	
Net earnings	18,000,234	$ 2.76	17,784,368	$ 2.74
Cash dividends declared	7,813,700	1.20	7,796,409	1.20
Income taxes	20,458,000	3.14	19,964,000	3.08
Shareholders' equity	153,651,742	23.59	142,939,381	22.03
Wages and employee benefits	53,357,616		51,860,707	
Working capital	77,273,924		75,734,160	
Plant and equipment (net)	95,984,834		87,073,911	
Capital expenditures	15,376,874		23,630,891	
Current ratio	—3.50:1—		—3.46:1—	
Number of shareholders	7,748		7,381	

4 GRAMS!

that's the amount of zinc bacitracin (Baciferm) per ton of feed that increases broiler profits $6 to $22 per 1000 birds.

That's all. 4 grams. And broiler profits can increase $6.55 per 1000 birds to $22.58 per 1000 birds. That's what Baciferm zinc bacitracin antibiotic supplements do for you.

The proof? We have just completed calculations on the results of *six* recent tests conducted in different parts of the country involving over 14,000 birds! The summary below highlights the pertinent facts and figures. See for yourself why Baciferm makes such good business sense (and dollars) in *your* broiler feeds. These results confirm the data from scores of tests run during the past several years.

	NUMBER OF BIRDS	EXTRA PROFIT PER THOUSAND BIRDS OVER CONTROL (4 GRAMS ZINC BACITRACIN PER TON)
CSC TEST #23	524	$15.34
COLLEGE TEST #58	964	$13.95
COLLEGE TEST #60	300	$ 9.50
FEED MANUFACTURER'S TEST #78	12,000	$ 6.55
COLLEGE TEST #82	600	$21.85
COLLEGE TEST #83	150	$22.58

BASIS: market price of broilers 16¢ per lb.; feed cost 4½¢ per lb.; zinc bacitracin 7¢ per gram.

Doesn't it look like Baciferm is the buy for you? Baciferm's the buy for more and more feed manufacturers for both low and high level use. It's the economical antibiotic supplement for poultry and swine feeds. It contains the selectively-active antibiotic *zinc* bacitracin made exclusively by CSC under Patent No. 2,809,892. Baciferm's selective action kills dangerous bacteria fast but lets beneficial bacteria go right on producing vitamins and other valuable growth factors. College tests show that Baciferm gives full value in stimulating growth and reducing mortality. And — *zinc* bacitracin has the antibiotic stability manufacturers require.

One other thing: for stress and disease Baciferm can be added to each ton of *your* feed at $2 to $4 less than the cost of the tetracyclines.

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RUTGERS POULTRY DAY—Feed men gather around Dr. Hans Fisher, Rutgers nutritionist, in the photo at left, for a closer look at his data on soybean meal presented at the Rutgers Poultry Industry Day. From the left, are: Meyer Berkowitz, Berkowitz Feed Mills, Norma, N.J.; Lou Novins, LeCompte Co., Lakewood, N.J.; Irving Lintner, Sunrise Milling Co., Somerville, N.J., president, New Jersey Feed Dealers Assn.; Dr. Fisher; John Vandervort, G.L.F., Ithaca, N.Y.; Dr. Paul Griminger, Rutgers nutritionist, and E. G. Rubinoff, Jacob Rubinoff Co., Vineland, N.J. In the center photo Hans Lutz, Rutgers technician, shows equipment for measuring the shell strength of an egg. Showing their interest in the equipment, are from the left: Morton McDonald, Jr., American Cyanamid Co., New York; Edwin L. Carter, Beacon Milling Co., Cayuga, N.Y., and J. Richard Wilson, representing John W. Eshelman & Sons, Lancaster, Pa. In the photo at the right, Helen E. Burd, Rutgers poultry researcher, explains a serum neutralization test for the detection of bronchitis. Her audience, left to right, includes: Samuel M. Golden and Bernard Zeigler, both of Amburgo Co., Philadelphia, and Albert Jackson, poultryman from Freehold, N.J.

New Jersey Conference

Properly Heated Soybean Meal Cited as a Top Protein Source

By RUSSELL STANTON
Rutgers University

NEW BRUNSWICK, N.J.—Properly heated soybean meal provides one of the best available protein sources for the growing as well as the laying chicken, Dr. Hans Fisher told those assembled for the Rutgers Poultry Industry Day. His talk was entitled "Utilization of Soybeans by Poultry."

He said, "Under certain conditions raw as well as ground, unextracted soybean may be utilized to advantage in feeding laying hens but this practice is never as efficient as the use of properly heated processed meal."

Speaking on the possibilities of feeding ground, unextracted soybeans, he said that work with mature hens has shown that equally good egg production can be obtained when all the dietary soybean meal is replaced by ground, unextracted soybeans.

On the other hand, he pointed out, work conducted at Cornell University has conclusively demonstrated that the oil from such unextracted ground soybeans is much more poorly absorbed than is the case if an equal quantity of soybean oil is added to an extracted soybean meal. He stated that study of processing methods has shown that if the whole unextracted soybeans are flaked rather than ground the oil will be equally well absorbed as when fed separately, thereby assuring full utilization of the caloric value of this feedstuff.

In a preface to his talk Dr. Fisher said he had reason to think that many people still are convinced that an efficient poultry ration must contain animal protein and furthermore that there is "something magical" in terms of the quality of the protein in fish meal.

The nutrition specialist said that during the last 30 years there have been reports that raw soybeans exert a detrimental effect on the growth potential of chicks.

Toxic factors have been ascribed to raw soybean meal. This factor has been said to possess the ability to destroy the digestive enzymes necessary for proper absorption of the protein. A variety of other factors have been said to depress the usefulness of raw soybeans.

Dr. Fisher says his study refutes this.

His findings suggest rather that the growth depressing properties of raw soybean meal for the most part are due to an impaired utilization of amino acid.

Dr. Fisher was able to show this by: overcoming the growth depression by adding an amino acid supplement, and improving growth rate by feeding an increasingly higher level of the unheated meal.

The reasoning goes that if there is something toxic in raw soybeans, then it would be natural to expect more growth slow-down rather than an improvement in growth when more unheated meal is fed.

Dipping into the chemistry of soybean meal, Dr. Fisher declared it is the orientation of the protein molecule itself which throttles the best possible use of the "building blocks" that make up the protein.

The heating process simply changes the protein molecule so that all the amino acids can be more readily assimilated. Toasting has nothing to do with "destroying" any so-called toxic element.

As for the laying hen, the Rutgers nutrition specialist said that equally good production usually is obtained when the soybean meal portion is provided in the form of unheated meal, but she must have more of it. Also, she needs extra methionine and more vitamin B_{12} than when she gets heated meal.

A NEW LOOK AT THE CALCIUM REQUIREMENT FOR EGG PRODUCTION—Dr. Paul Griminger, assistant professor of poultry nutrition, said, the "rapid decrease in

(Turn to NEW JERSEY, page 95)

ADM to Build New Research Center

MINNEAPOLIS—Archer-Daniels-Midland Co., one of the nation's leading producers of chemicals, foods and feed ingredients, announced last week at a press conference that it will construct a new research center which will bring together the company's research, technical service, scientific and technical libraries and engineering department.

John H. Daniels, ADM president, said the new science facility will be built on a 73-acre tract overlooking the Minnesota River valley in Bloomington, Minn, a Minneapolis suburb. Construction is to start in mid-June, 1961, and completion is scheduled for 1962.

Dr. James C. Konen, ADM vice president for research and development, reported that the new research center will provide space for more than 250 research, engineering and supporting personnel. This, he said, will permit the doubling of technical manpower now maintained by the company at its present research center in Minneapolis, which is housed in a leased building.

ADM's new research center will consist of a laboratory building comprised of two wings extending from a central core and a separate administration building connected with the research building by a covered entryway.

WHAT IT WILL LOOK LIKE—John H. Daniels, president of Archer-Daniels-Midland Co. (left), and Dr. James C. Konen, ADM vice president for research and development, discuss plans for new research center which ADM plans to build in Bloomington, Minn., a suburb of Minneapolis. The center will group the company's research, technical service, scientific and technical libraries and engineering department.

Facilities Grouped

The 13 separate scientific and technical facilities within the research center will be grouped according to common fields of scientific study. The units which are most likely to involve work of importance to the feed industry include: Analysis and analytical research, physical testing of new materials and products, research on modification of fatty acids and fatty oils to provide new chemical derivatives, carbohydrate and protein studies, bacteriology and fermentation research, long range research in the entire field of ADM's widely diversified interests, the company's engineering department and scientific and technical information center.

The research center, designed by Ellerbe & Co., St. Paul architect, will be a colorful blend of painted brick, ceramic tile, glass and aluminum. It will be similar in architecture to the chemical producing center ADM is building at Peoria, Ill.

In addition to the Minneapolis laboratory, where major research projects are carried out, ADM has research facilities at its plants in Newark, N.J.; Evandale, Ohio, and Los Angeles, Cal.

ADM also maintains a central quality control laboratory in Minneapolis and smaller control labs at many of its plants. These are devoted to control of product quality and are not involved in the research center project.

Four Marketing Units

The company's widely diversified activities are organized into four marketing units—agricultural, chemical and specialty groups and the oversea division.

ADM's agricultural group is comprised of the linseed division; the soybean division; the flour division; the grain division, which includes the operation of 20 terminal elevators; the dehydrated alfalfa division, which, headquartered in Kansas City, operates 30 plants in Arizona, Colorado, Kansas, Missouri, Nebraska and Utah, and the division of feed operations in Mexico. ADM, in partnership with a group of Mexico City industrialists, owns three concerns in Mexico which manufacture and market livestock and poultry feeds, eggs, poultry and a line of veterinary supplies.

Within ADM's specialty group is the flax fiber division, which produces shives for use in livestock molasses feeds.

Also in the specialty group is ADM's equipment division. This division designs, manufactures, markets and installs processing, handling and bulk storage equipment for feeds and feed ingredients, alfalfa and dry chemicals. ADM equipment is fabricated at Neodesha, Kansas.

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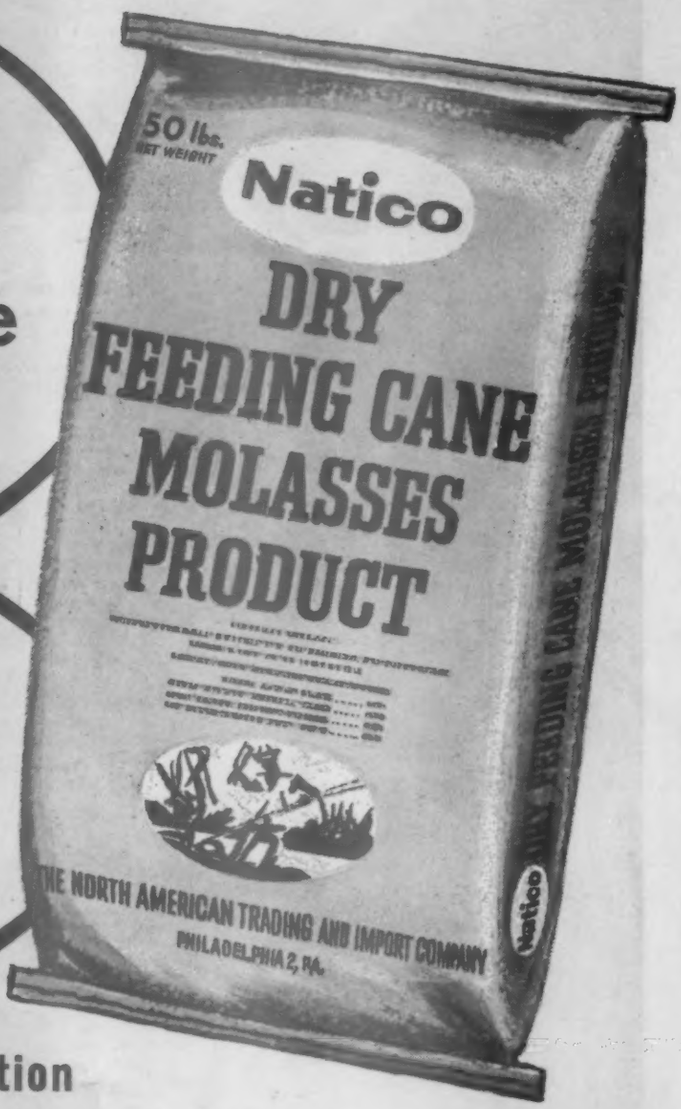

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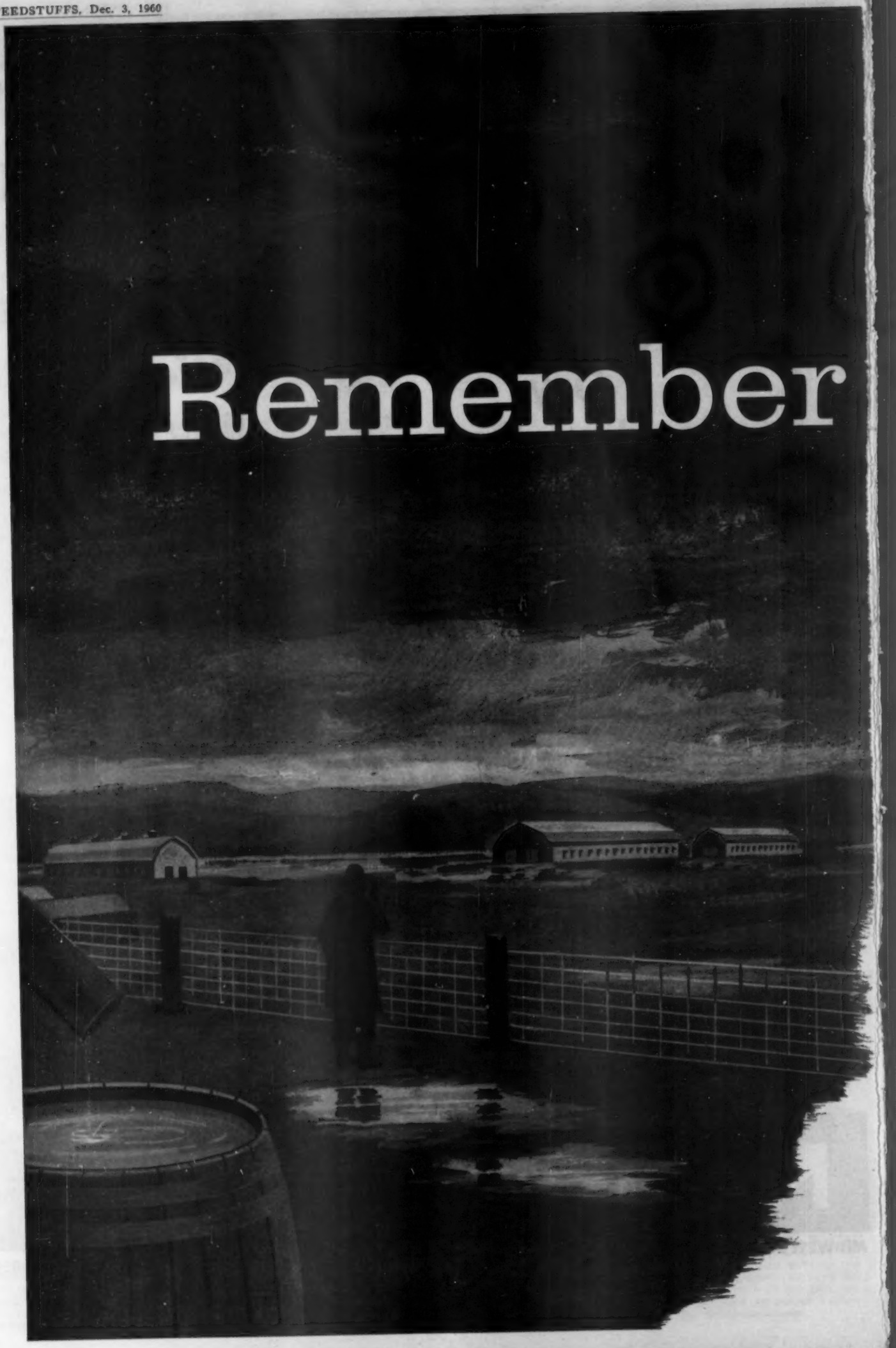
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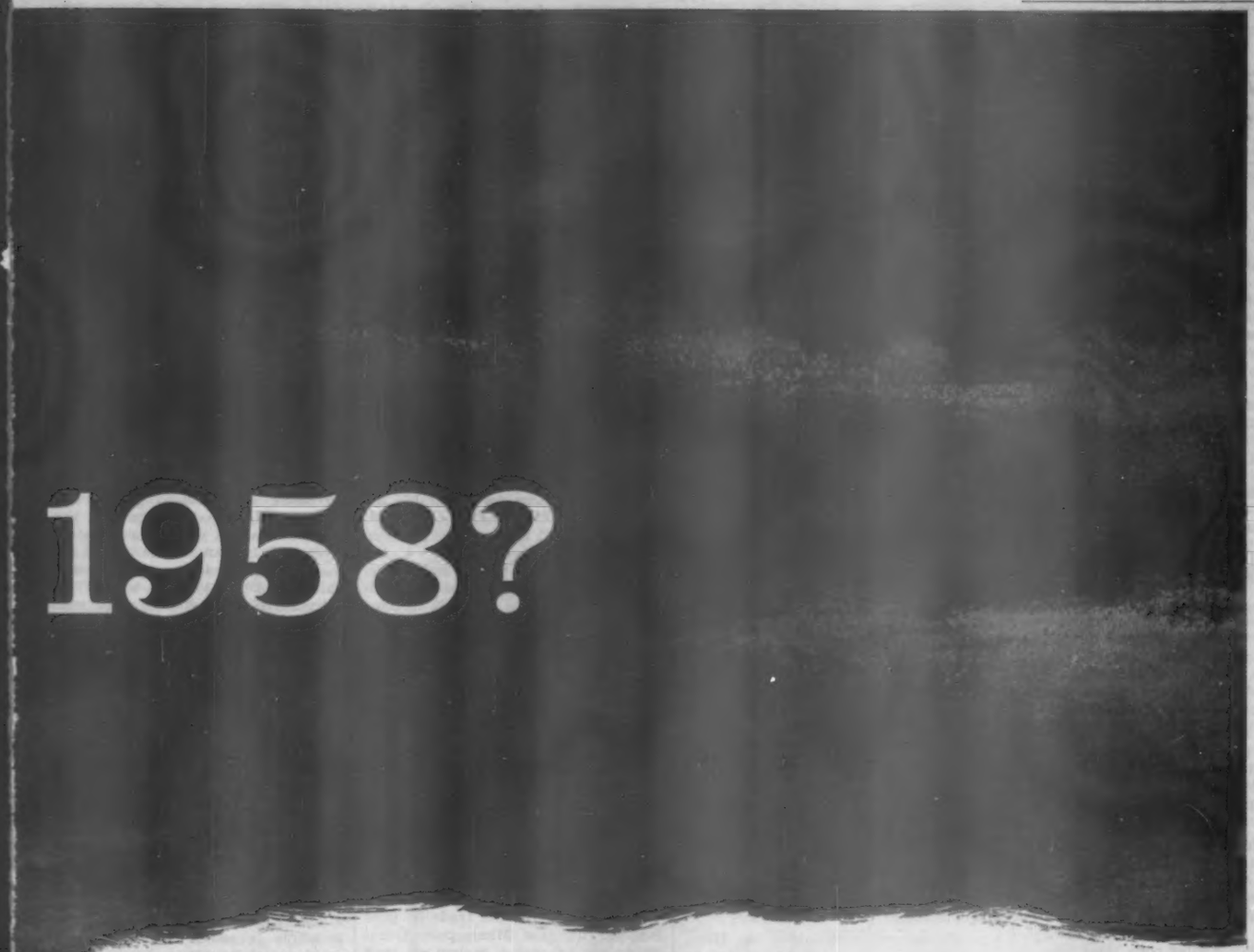

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1958 was the year Dr. Salsbury's Unistat was first given widespread trial by growers. It was also a year marked by bad weather which triggered disastrous coccidiosis outbreaks across the country. This gave Unistat a chance to prove its worth under bad field conditions right alongside other coccidiostats. *Unistat-protected flocks came through almost unscathed,* although nearby flocks suffered serious loss. Since then, Unistat has grown steadily in popularity until today it is fed to over a billion broilers a year.

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NATIONWIDE SERVICE TO THE FEED INDUSTRY

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Feed for Thought

A BEEFY PROBLEM

More and more evidnce is coming to light to indicate the need for fortifying beef cattle rations with a reliable, stabilized form of vitamin A. During the recent Society of Animal Production meetings, Dr. Perry of Purdue University reported on recent tests conducted at the University on yearling cattle. The cattle were fed an ear corn-soybean meal-mineral ration, fortified with amounts of vitamin A varying from none up to 32,000 International Units per head per day. The steers on the higher levels of vitamin A showed greater heat tolerance during the summer months, ate more, gained faster, and had increased plasma vitamin A with each increment of vitamin A added to the ration.

The control cattle at Purdue, without supplemental vitamin A, on a ration consisting of 88% ground ear corn showed some classic symptoms of vitamin A deficiency, such as edema in the legs and some night blindness.

Dr. A. L. Neumann of the University of Illinois had previously reported that vitamin A deficiencies developed in cattle fed rations containing alfalfa meal and 64% corn at the Illinois Experiment Station.

Some factors to consider in determining the vitamin A values in a cattle ration are that the carotene, or provitamin A, value of alfalfa meal may be reduced during storage to as low as 9% of the amount it contained when cut. Yellow corn loses carotene in storage and also during high temperature drying or heating in the bins. Cattle are poor converters of carotene to vitamin A; some authorities say that only 25% of the carotene is converted to vitamin A. When animals are diseased their ability to convert carotene to vitamin A may also be hampered. Nitrates in our grain, which may be increasing due to high fertilization of our growing grains, may also be a factor. Nitrates interfere with the conversion of carotene to vitamin A.

Why take a chance on poor results in feeding cattle after so much capital, equipment and time are invested in them, by not providing them with an economical, readily available, fully-protected source of true vitamin A—Peter Hand Vitamin A Palmitate. Peter Hand Vitamin A is available in a wide variety of potencies to suit your mixing operation. Call, write or wire today for full details.

J. R. LINSNER

Director of Technical Services

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Look for "Feed for Thought" every month. This popular column appears regularly in this same place (page 14) in the first Feedstuffs issue of each month.

Peter Hand

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Canadian Agriculture Due for More Attention From 1961 Parliament

By Special Correspondent

OTTAWA—Agriculture is due for more emphasis in the new session of Canada's Parliament than it got last year. Public attention already given to farm problems as a result of Alvin Hamilton's first month as minister of agriculture seems likely to insure this.

Predictions have it that prairie wheat problems and farmers' criticisms of higher prices for machinery and repairs will be given major attention.

But, according to some observers, the issue that is likely to give the opposition party a field day and embarrass the government most is the one involving eggs. Opposition members are expected to repeat many times this question: "Why does Mrs. Jones receive only 25¢ doz., including deficiency payment, while Mrs. Smith, a few farms away, gets 37¢ when the support price is 33¢?"

Why Prime Minister John G. Diefenbaker appointed Mr. Hamilton to the agriculture portfolio is becoming clear in Ottawa—the prime minister's farm program, which he initiated in August, 1958, was beginning to founder.

Important new farm legislation for crop insurance, farm credit and price stabilization was lumped together with acreage payments and high support for wool and butter as the farm program. As a result, all were publicly called palliatives and compromises to satisfy farmers' demands temporarily rather than being part of the rounded farm program Mr. Diefenbaker promised in 1958.

The biggest contribution Mr. Hamilton has made in his first month as minister of agriculture is bringing back into focus the prime minister's long-run objectives of 1958. The new minister has been able to key farm assistance to an ultimate target, so it seems, and success in this would open the way for the government to expand its assistance to agriculture, modify present programs that do not contribute to the central goal and, at the same time, satisfy non-farming taxpayers that farm assistance is a good thing.

SWINE PRODUCTS CONFERENCE—Sixty dealers and distributors gathered recently at Bloomington, Ill., for a hog products symposium. Discussion leaders stressed programs for profitable hog farrowing, management practices to prevent diseases, the diseases preventable by vaccination, maladies that permanently affect the economic efficiency of swine, and a medication program to prevent diseases. Above, Dr. F. J. Siccardi, veterinarian and technical service representative of Dr. Salsbury's Laboratories, presents a discussion of swine diseases. Other discussion leaders, all from Dr. Salsbury's, were Philip S. Wright, package products manager; Virgil I. Heigen, district sales manager, and Dale E. Magee, swine sales specialist. This meeting was one of a series of six in Illinois and Indiana.

Exchange Trading by Phone Planned

SAN FRANCISCO—The San Francisco Grain Exchange is the first exchange in the country to install private lines to permit traders to buy and sell grain on a call board by telephone.

The exchange instituted the telephone system to counteract the decline in call board trading due to the decentralization of the trade. It goes further than the Minneapolis Grain Exchange television system in that traders can actually buy and sell grain from a distance.

This is how the system is to work: The subscriber dials an unlisted number and is connected with a telephone unit on the trading floor. He hears every transaction, and can follow it on a pad provided by the exchange, printed with the format of the call board. If the telephone trader wishes to make a bid or name a price, he just speaks up, and his call is heard on the floor through amplifiers. If a sale is made, the exchange manager mails the contract immediately.

Grain Exchange Manager E. W. Huebner said the Pacific Telephone Co. had guaranteed installation by Dec. 12. A two month trial period is to begin then.

"Naturally the first several sessions will entail some trial and error," Mr. Huebner said, "but we feel the basic principle is sound and see greater market activity with resultant instant market information for the industry."

Installation costs and rental for the trial period are being borne by the exchange. When the system is made permanent, each subscriber will be given a unit for his exclusive use. The telephone company said there was no limit to the number of units which could be installed. The unit rental—not yet determined, since this is the first service of its kind, but estimated at $5 to $7.50—will appear on the subscriber's telephone bill.

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MANUFACTURERS OF THE ARNOLD DRYER

Henry W. Crutchfield

SALES MANAGER—Henry W. Crutchfield has been named general sales manager for feed products by The Quaker Oats Co. (Feedstuffs, Nov. 26). He succeeds the late John C. Huckabee, who died Nov. 8. Mr. Crutchfield has been with the company's southwest feed division with headquarters in Sherman, Texas, since 1955. He joined the company in 1940. He will be responsible for Ful-O-Pep feed sales in the company's marketing areas throughout the U.S. His headquarters will be in Chicago.

West Virginia Names Chicago Sales Addition

CHICAGO—Thomas G. Lockwood has been added to the Chicago district sales staff of the multiwall bag division of West Virginia Pulp and Paper Co., Victor S. Luke, division manager, announced.

T. G. Lockwood

Mr. Lockwood previously was assigned to the company's kraft sales division in Chicago. He joined West Virginia last year after more than a decade of experience in the kraft paper and converting fields.

Egg Co-op to Merge

BUTLER, PA. — The Butler Cooperative Egg Auction, Inc., voted to merge with Eastern States Farmers Exchange, Inc., at its annual membership meeting here.

About 125 persons attended the meeting where the merger was unanimously recommended to the Butler membership by its board of directors.

Mills to Curb Burlap Production in Effort To Lower Jute Prices

NEW YORK—Despite labor union opposition, jute mills in India last week gained some ground in their efforts to curb the strong loom demand which has contributed to the bidding up of raw jute prices.

The Indian Jute Mills Assn., Calcutta, has notified its Burlap Council here that Indian jute mills have decided to reduce their working hours from 48 to 45 hours per week and to shut down 12% of their looms. However, it will take about a month for this arrangememnt to become effective.

The proposed reduction is the equivalent of a 17% loom seal on the basis of a 48-hour work week.

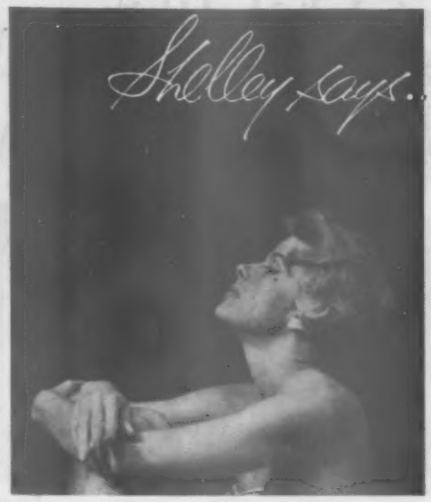
Jute milling curtailment is one of several actions which IJMA has turned to in a search for effective means of controlling rising burlap prices (Feedstuffs, Nov. 19). These increasing burlap prices—a gain of approximately 25% in six months—have resulted in drastic cuts in purchases by major burlap buyers in the U.S., Canada and South America. The U.S. is India's largest market for hessian bagging.

IJMA has adopted a policy providing for the compulsory sealing of looms to reduce mill demand for jute, which has been in very short supply this year.

Another step industry has taken to help reduce prices is the establishment of a quota system for the purchase of raw jute. Reports say the scheme has not brought prices down but it has helped to keep them from rising further.

In addition, the jute industry has announced plans for a buffer stock program which would help stabilize prices. In the event of a bumper crop, mills would purchase determined quantities of jute over and above current requirements for later use when supplies were limited.

The Indian Jute Mills Assn. holds the opinion that the only long-range solution to current burlap pricing problem is to make India self-sufficient in both the quantity and quality of raw jute grown within its borders.



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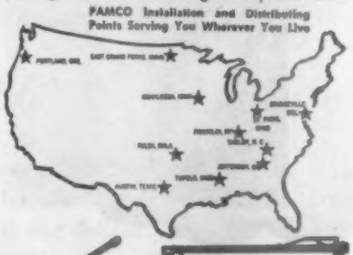

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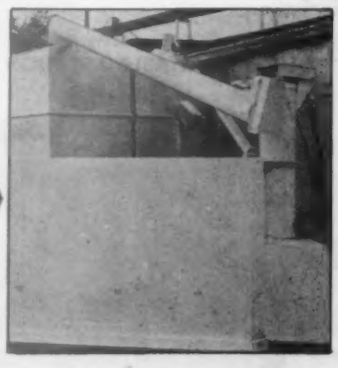

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SKOOP SKIPPER

Keeping Layers in Individual Units Pays in Production, Lower Mortality

WASHINGTON—The cost of extra labor and handling for separating layers into smaller or individual units may be offset by greater egg production and lower mortality, according to tests conducted by the U.S. Department of Agriculture.

The USDA tests show that a single hen alone in an 8 by 10 in. cage is contented and produces well. However, five birds in a 24 in. cage are irritable, aggravating cannibalism, and the mortality rate goes up and the production goes down.

This, in itself was not exciting, USDA said, but the level to which production goes down and mortality goes up is surprising.

In recent tests by R. W. Lowe, poultry husbandman at the Southwest Poultry Experiment Station, Glendale, Ariz., one bird was placed in each 8 and 10 in. cage, two birds in each 12 in. cage and five birds in each 24 in. cage. All birds were in production when housed at five months of age.

The test showed that the birds living five to a 24 in. cage averaged 208 eggs each for the 336 day period of the test with a mortality rate of 38%. Hens doubling up in 12 in. quarters did a little better with 226 eggs for the period and a mortality rate of 16%.

The birds in private cages did best of all. Those in 10 in. cages averaged 232 eggs for the test period with a mortality rate of 13% and those in 8 in. cages averaged 231 eggs and had a mortality rate of 12%. Feed conversion was the same for birds in all cages.

Corey, Smith Receive Two-Year Sentences

PORTLAND, ORE. — Earl G. Corey and Laurence M. Smith were given two-year prison sentences recently by U.S. District Court Judge Gus J. Solomon. They were convicted of conspiracy and making false statements concerning storage of government wheat.

Mr. Corey, a former Portland director of the Commodity Stabilization Service of the U.S. Department of Agriculture, was convicted on two counts of conspiracy and one on conflict of interest which could have carried maximum penalties of $22,000 in fines and 12 years' imprisonment.

Mr. Smith was found guilty on 10 charges of submitting false statements to Commodity Credit Corp. and for conspiracy, which could have carried maximum penalties of $100,000 fine and 50 years' imprisonment.

Both men and a third party were partners in the Three State Warehouse Co. doing business with the government.

The company has a case pending in Federal court to collect almost $100,000 worth of contracts with the government.

The government said that it should not honor these contracts and filed a counter-suit to recover $249,000 already paid to the Three State Warehouse Co. under the false claim statute.

INFORMATION DIRECTOR — The National Broiler Council has announced the appointment of William L. Larson to fill the new position of director of information and publications, according to Frank Frazier, NBC executive vice president (Feedstuffs, Nov. 26). Mr. Larson went to the Richmond, Va., NBC headquarters office from Kansas City, Mo., where he had his own free lance public relations operation. He has been associated in many phases of advertising and public relations over the past 10 years. This past summer he produced a special colored slide story entitled, "Opportunity Knocks—At Home Plate" for the Midwest Feed Manufacturers Assn. in Kansas City.

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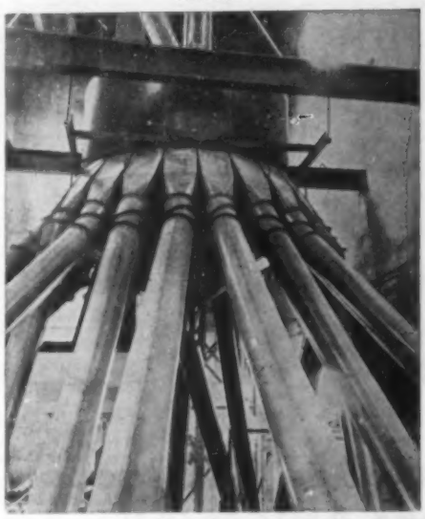

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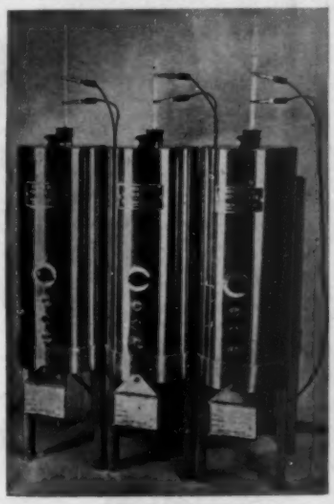

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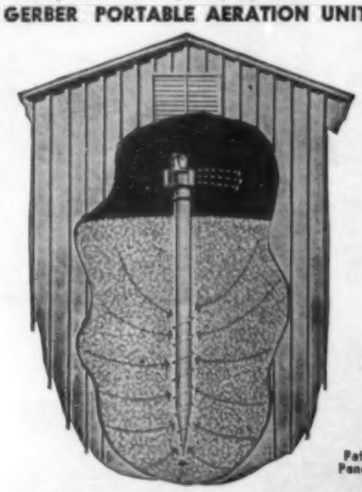

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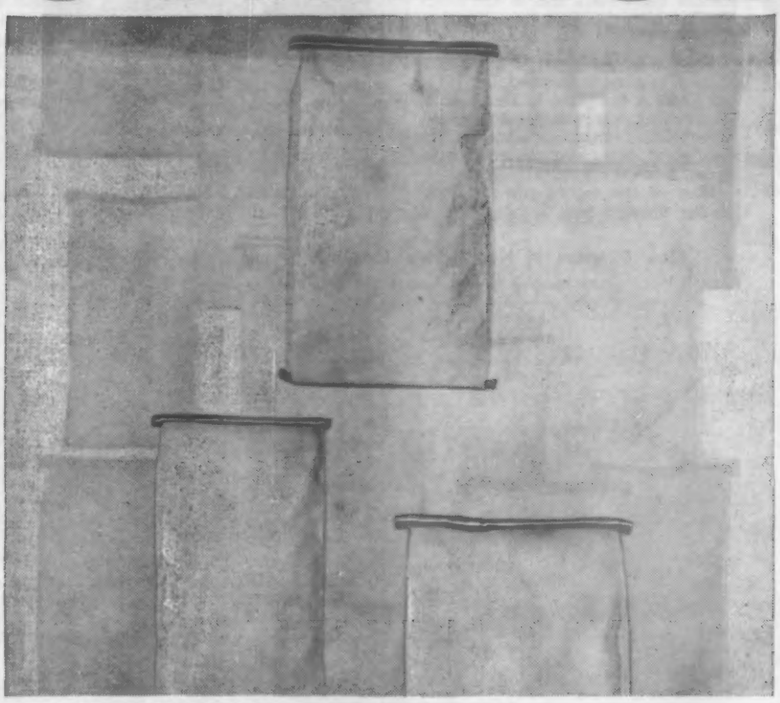

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Complete Pelleted Feed, Including Roughage, Made In New Missouri Plant

By Thomas E. Letch
Feedstuffs Staff

One of the first feed plants designed and built to manufacture a complete pelleted feed, including roughage, was opened recently in Tarkio, Mo. The starting up of the Tarkio Pelleting Corp. mill in August represented the culmination of several years of planning by a group of cattle feeders interested in a plant to make a complete pelleted feed.

After a lengthy negotiation period, the go-ahead was finally given when 34 stockholders, all local landowners, raised enough money to build the type of mill which they believed the area needed.

The $300,000 plant, which has a capacity of about 150 tons of mash feed and 50-80 tons of pelleted feed in an 8-hour day, manufactures a full line of feed, although the emphasis is on roughage-containing complete pelleted feed for ruminants. The 34 owners of the mill will use a sizeable portion of the anticipated production of the plant.

PELLET COOLER—This ADM pellet cooler in the Tarkio plant has a capacity of about 14 tons per hour. In this photo, pellets have been cooled in the 6-ft. square chamber and are dropping onto a conveyor and then moving to a scalper.

Direct to Consumers

Located on a 13-acre site at the southeast corner of the Tarkio city limits, the mill is selling direct to consumers within a 50-mile radius. Tarkio, a town of about 2,200, is only a few miles from the Iowa-Nebraska-Kansas state lines and in the heart of a major grain and livestock producing area.

The Tarkio Pelleting Corp. utilizes a base mix manufactured for it by the Swift & Co. plant in Des Moines. To this mix, which includes vitamins, minerals and other feed additives, the local plant adds grain, protein, roughage and other major ingredients.

Most of the ingredients and most of the finished feed are handled in bulk. However, the plant is also able to sack off feed and can receive sacked ingredients.

UNIQUE FEATURE—A unique feature of the plant, designed and built by the Archer-Daniels-Midland Co.'s Equipment Division, is a separate hay and ear corn grinding building, shown in the foreground of this photo. Ear corn is stored in the corn crib in the left foreground. Hay bales are stacked on a concrete slab. An 80-ft. conveyor runs between the hay bales and the corn crib. Later a building will cover this area. At the far left is a warehouse building for storing sacked feed. Sacked pre-mixes are stored in the basement of the mill, under the office area.

The mill was designed and built by the equipment division of the Archer-Daniels-Midland Co., and much of the equipment was made by ADM. A newly designed ADM pellet cooler is one of the special parts of the mill.

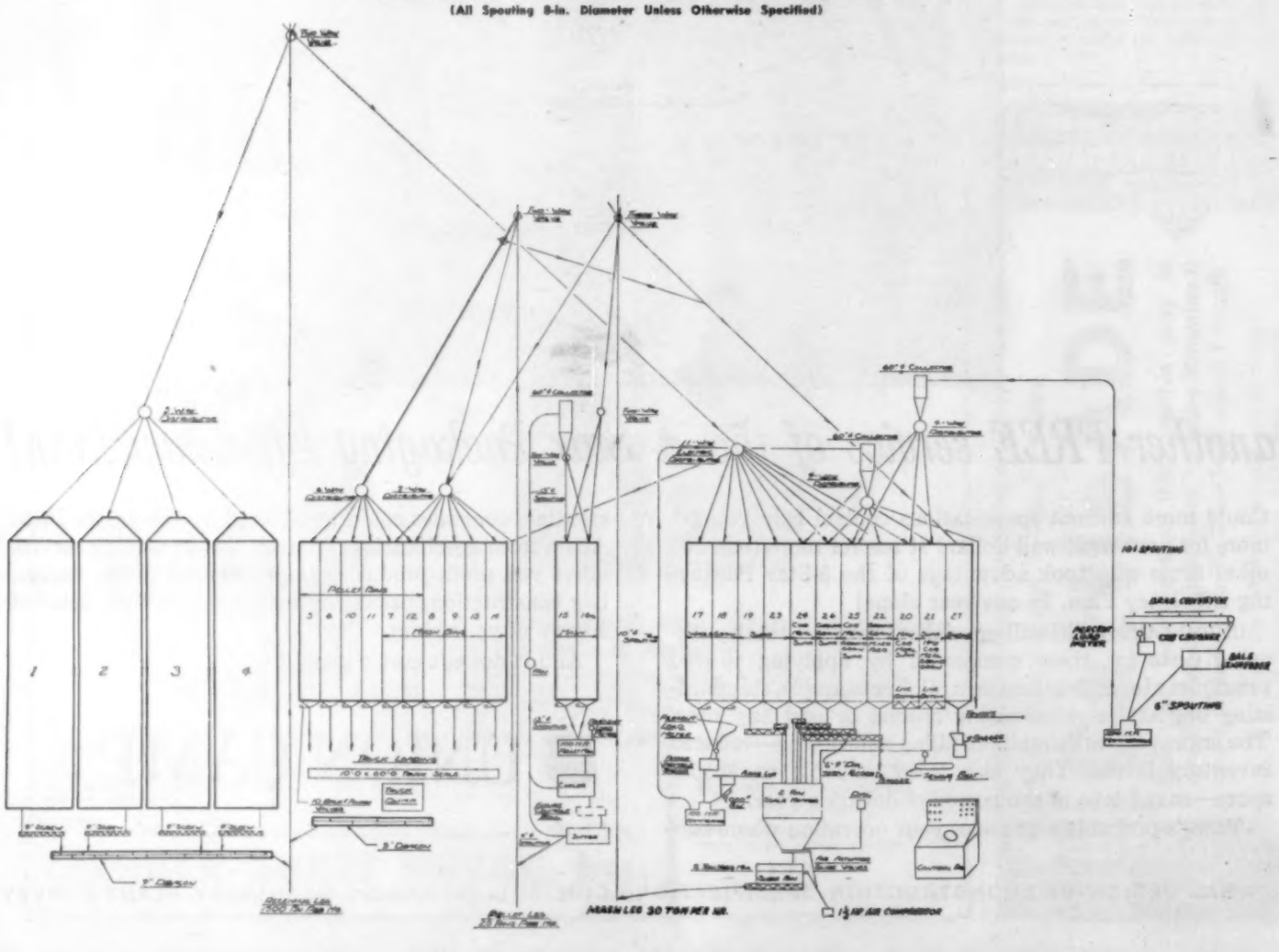
Roughage Grinding

The most unique feature of the mill is the roughage grinding operation. Located in its own building, to reduce explosion and fire danger, hence insurance rates, this facility can grind hay or ear corn interchangeably.

Baled hay is stored on a concrete slab that extends from the roughage building. An 80-ft. drag conveyor running in a slight depression adjacent to this slab is loaded by a man tipping the bales onto it. Ear corn is stored in slat-type cribs at the end of the conveyor. Removing slats in the cribs results in the corn rolling onto the conveyor. Eventually, a corn and hay storage building will be erected over the conveyor.

The workhorse in the roughage

Flow Diagram of New Tarkio (Mo.) Pelleting Corp. Plant
(All Spouting 8-In. Diameter Unless Otherwise Specified)



building is a 200 h.p. 30-in. ADM hammermill. When hay is being handled, the drag conveyor force feeds an ADM bale shredder equipped with a 25 h.p. motor and fan. From the shredder the chopped hay is blown into the hammermill where it is ground through a ⅛-in. screen. The fine-ground hay is then blown into a collector from which it drops into one of two ADM live-bottom bins. Each bin will hold 20 tons of fine-ground hay. Six 9-in. screws in a battery form the bottom of one bin, and four 9-in. screws form the bottom of the second bin so that there can be no bridging. Push buttons on the control console activate the live-bottoms and discharge ground hay into a hopper scale.

When ear corn is ground, the bale shredder is by-passed, the corn going directly into a Nickel ear corn crusher-feeder and then into the hammermill. Ground ear corn is stored in the ingredient bins which are equipped with positive feed screw conveyors discharging into the hopper scale.

Welded Ingredient Tanks

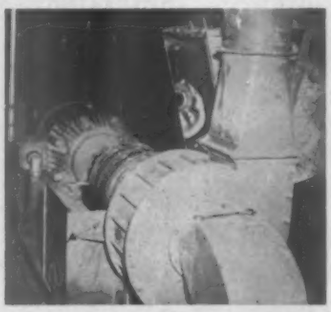
Another interesting feature of this mill is that the welded ingredient tanks, with additional steel pieces welded in between the tanks, serve as the roof for the working area of the plant. The working area consists of a first floor, at dock height, and a basement.

Pre-mixes and additives for the mixing operation are stored on pallets in a warehouse space in the basement below the office. These pallets are equipped with swivel casters. When the mill is producing a particu-

LIVE-BOTTOM BIN—Shown here is one of the live-bottom bins in the new Tarkio mill. This bin handles ground hay, and assures a free flow.

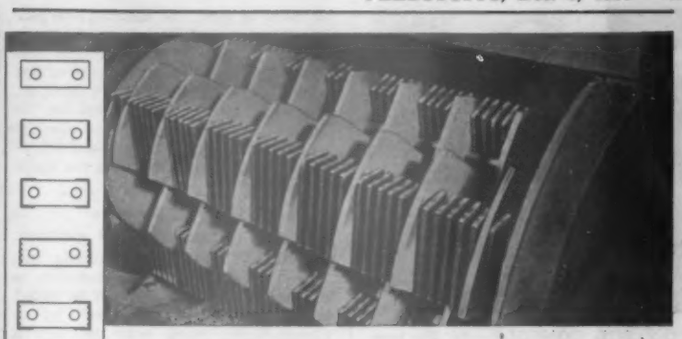
HAY SHREDDER—Shown in the roughage grinding building are Robert F. Hessell (left), manager, and O. C. Swackhammer, vice president. A hay bale is going into a bale shredder before going to a hammermill.

SACKING AREA—Feed is packed off in the warehouse area adjacent to the operating area of the mill. One or two operators can operate the packing equipment. Bags are loaded onto pallets at the end of the conveyor and moved by fork lift truck into the warehouse building.



HAMMERMILL—Open for inspection is the 100 h.p., 20-in. ADM hammermill that grinds grain in the plant. A 200 h.p. ADM hammermill is used in the roughage grinding operation.

OPEN HOUSE—New Tarkio (Mo.) Pelleting Corp. plant was gaily decked out for a recent open house. This front view shows the grain tanks on the right and the ingredient and load-out bins on the left, the load-out bins over the driveway and a 50-ton scale.



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CONTROL CONSOLE—At the control console in the new mill are George W. Knepper (left), president, and Robert F. Hessell, manager, of the Tarkio Pelleting Corp. The selector switch on the front of the console is used for activating the ingredient bin feeders which discharge into the 5,000-lb. hopper scale in the background.

lar kind of feed, the appropriate pallets are elevated by a fork-lift truck through a well in the first floor and rolled up to the floor dump over the mixer. As the pre-mixes are used up, the empty pallets are rolled to the bagging area where they are loaded with finished bagged feed and transported by fork-lift truck to the main warehouse.

How Mill Operates

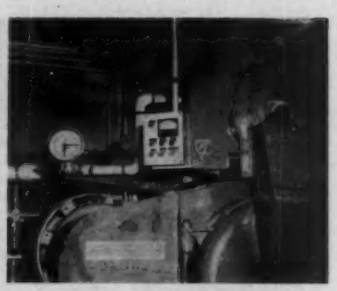
Here is the way the mill operates:

RECEIVING—All ingredients are received by truck now. However, a railroad receiving dump will be added later. Trucks are dumped by a Strong-Scott truck hoist through a 50-ton Fairbanks-Morse scale. Ingredients are moved by a 60-ton per hour self-cleaning drag-type conveyor made by Screw Conveyor Corp. into a 1,500 bu. per hour receiving leg. After being elevatored, ingredients can go either to the grain storage tanks, to the working ingredient bins or to the grinding bins.

There are four 11,000-bu. grain tanks, eight 30-ton working ingredient tanks and two 20-ton grinding tanks. All are welded bins. Each of the grain tanks is equipped with Rolfes' aeration and temperature control devices. An 11-way ADM electric distributor is used over the ingredient bins. All other distributors are manually operated by remote control.

GRINDING AND MIXING—Grain is moved from the grain tanks by screw conveyor unloaders discharging into the receiving leg. After it is elevated, it can either go to the grinding bins, or it can be loaded into a truck through a separate spout. Grain in the grinding bins is fed through a Jacobson power-driven percentage feeder into a 100 h.p. ADM 20-in. hammermill. Blown to an overhead collector, the ground grain is then spouted into one of the ingredient bins over the mixer.

With push-button control of screw feeders from each of the ingredient bins, the operator at the control console discharges ingredients into a 5,000-lb. Fairbanks-Morse hopper scale. Pre-weighed pre-mixes are added through a floor dump directly into the mixer. The operator dumps the hopper scale into a 2-ton Strong-Scott horizontal mixer. A 2-ton surge bin below the mixer takes the mixed feed before it is moved by conveyor into the mash leg. Air actuated gates on the hopper scale and mixer are operated from the control console. The mash leg spouts into two 20-ton mash bins over the pellet mill, into a bagging bin or into mash bins over the driveway.



PELLET MILL—This 100 h.p. Sprout-Waldron pellet mill can produce from 6-10 tons per hour, depending upon the amount of roughage incorporated into the feed. Some of the Tarkio Pelleting Corp. customers are feeding rations containing as high as 70% roughage.

PELLETING—A 100 h.p. Sprout-Waldron pellet mill is fed from one of the overhead mash bins. Molasses is added at the pellet mill. It comes from a 10,000-gal. concrete tank located under the boiler room floor. Steam is supplied by a 40-h.p. Superior Scotch Marine boiler.

Pellets are cooled in a newly designed ADM pellet cooler said to incorporate advantages of both horizontal and vertical coolers. Hot pellets are spouted into a 6-ft. square cooling chamber. At the bottom of this chamber are nine perforated waffle bottom openings which give the chamber the equivalent of nine cooling columns. A 20 h.p. fan located at the top pulls air through the chamber, the air entering through the nine perforated openings. A special horizontal baffle at the top of the chamber assures that the air is pulled equally through all parts of the cooler.

Pellets drop through the perforated waffle bottom openings in the cooler onto a conveyor the entire width of the chamber. This conveyor is inclined so that there is an equal feed onto it from all nine openings in the cooler.

The pellet cooler can cool and dry up to 14 tons per hour. It is vertical

(Turn to NEW PLANT, page 81)

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Despite the almost annual introduction of new coccidiostats...

nfz® and *bifuran* still come closest to what you and your customers look for in a coccidiostat for replacement birds!

During the last few years — amid a lot of fanfare and promises — several new coccidiostats have been introduced to the feed industry.

While some have started off well, they have failed to live up to their advance billing. Not one has solved the coccidiosis problem.

Unfortunately, there is *still* no such thing as a perfect coccidiostat. We don't have one . . . and neither does anyone else.

But here's a point worth noting: While many heralded coccidiostats have come and faded away, *nfz* and *bifuran* have continued in demand for replacement birds. In fact, use of these two products in replacement feeds is growing.

No registration headaches — One reason behind the increasing demand for *nfz* and *bifuran* is the fact that you can use either of these coccidiostats *without registration problems.* They are not new drugs and are cleared for use in combination with almost all commonly used additives.

But a more basic reason is found in a recent survey in which feed manufacturers were asked, "What do you look for primarily in evaluating a coccidiostat for replacement birds?" The survey shows *nfz and bifuran come closest to providing the benefits wanted.*

Considered by far the most important feature of a coccidiostat for replacement birds is the building of "lifetime immunity" . . . followed by the "safety" of the drug. *nfz* and *bifuran* deliver both of these major benefits . . . plus many additional features that distinguish them from other coccidiostats. Following is the complete *nfz* and *bifuran* protective package:

Lifetime immunity to coccidiosis by housing time... that's a "must" for replacement birds. Both *nfz* and *bifuran* allow lasting immunity development, the natural way—by permitting a mild, controlled infection during the growing period.

Safe, nontoxic — Neither *nfz* nor *bifuran* has harmful effects on internal egg quality, shell texture, hatchability or fertility. Unlike most other commonly used coccidiostats, *nfz* and *bifuran* can be safely fed to laying hens. Also, these two medications are nontoxic to livestock and pets.

Control outbreaks — You can raise the *nfz* or *bifuran* intake to the coccidiosis treatment level... safely... without bringing in another drug. This is not possible with some coccidiostats.

Antibacterial — In addition to aiding in the lifetime immunity process, *nfz* and *bifuran* knock out many secondary infections that can sap vitality, cause nonproductive runts and culls. They give you more than just coccidiosis protection.

Effective against pullorum — By increasing the *nfz* or *bifuran* level to 3 lbs. per ton of feed for 10 to 14 days, you can prevent mortality from pullorum. There's no need to come in with other drugs.

In the light of current registration headaches and confusion about coccidiostats, we wanted to remind you that perhaps *nfz* and *bifuran* can help solve problems for you. They are still doing the same effective job of controlling coccidiosis and allowing immunity they've always done.

For an *nfz-bifuran* reviewing session, get in touch with your Hess & Clark representative.

Effective against necro in pigs

While you have nfz or bifuran in your mill, here's another use for the same medication. nfz (at a level of 10 lbs. per ton of feed) and bifuran (at an 8-lb level) are effective, low-cost treatments for infectious necrotic enteritis in pigs. Self-fed to the entire herd for 5 to 7 days, these drugs prevent disease damage and allow the pigs to overcome the disease drag of necro.

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ZT-1-1

An Economic Analysis—

Alternative Feeds for Broilers

By W. R. Morrison and William L. Davis
University of Arkansas

The results of two recent studies at the Arkansas agricultural experiment station indicate that the broiler industry of northwest Arkansas could lower production costs by replacing corn in feed rations with milo. Feed grain represents approximately 65% of the volume of a broiler ration and is a large item of expense in broiler production.

Stephenson and Johnson reported on recent feeding trials conducted to compare corn and milo in Volume IX, No. 1 of Arkansas Farm Research. They found no statistically significant difference in chick growth or in efficiency of feed utilization when corn, milo or any combination thereof was used to supply the principal carbohydrate (Table 1).

A study was made of the procurement policies for feed grain of 24 northwest Arkansas feed manufacturers. During the entire 78 weeks surveyed milo prices were less than corn prices. The difference in price varied from a low of only 1.3¢ to a high of 46.2¢ per hundredweight. There were 43 weeks in which the difference was 20¢ or more, and only 8 weeks when the difference was 10¢ or less.

Yet only 10 out of the 24 feed manufacturers reported they had substituted milo for corn in their broiler rations during this period. These mills used an average of 69% corn and 31% milo at a feed grain cost of $2.26 per hundredweight. If they had used all milo, they would have saved 7% of their feed grain costs.

Had the 14 mill operators who reported not substituting milo for corn used 100% milo, they could have decreased their feed grain costs by 24¢ per hundredweight, or 10%. Table 2 gives the relative cost advantage of substituting milo for corn.

One explanation given for not substituting milo for corn was the palatability differences in the two grains. That is, a drastic change from corn to milo or from milo to corn could cause broilers to go off their feed for a short time.

If the price advantage between milo and corn changed frequently and rations were therefore also changed frequently, this could be a factor. The fact is, however, that milo had a price advantage over corn for the entire period studied.

Another reason reported for not substituting milo for corn was the lack of pigmentation in milo-fed birds. This was pointed out by Stephenson and Johnson. While pigmentation seems to have nothing to do with flavor, lack of pigmentation is considered an important factor by buyers of live broilers.

However, consumer preference studies, such as that done at the University of Tennessee and reported in Volume 37, page 17, of Poultry Science, have not revealed any consumer preference in favor of darkly pigmented birds.

If buyers do demand darkly pigmented broilers, pigmentation can be improved, according to the poultry nutritionists, by a change in the ration such as using 5% corn gluten meal to replace soybean oil meal on an equal protein basis.

EDITOR'S NOTE: An economic analysis made by Arkansas researchers indicates that milo could be used to a greater extent in broiler rations. This is explained in the accompanying article, which is from a report in Arkansas Farm Research, published by the University of Arkansas, Fayetteville.

TABLE 1. Feeding Value of Different Ratios of Corn and Milo

Source of carbohydrate	Average weight at 28 days	Feed per gram of gain
	——grams——	
All corn	432	1.80
⅔ corn, ⅓ milo..	431	1.99
⅓ corn, ⅓ milo..	442	1.86
⅓ corn, ⅔ milo..	423	2.05
All milo	401	2.20

TABLE 2. Relative Cost Advantage of Substituting Milo for Corn in Northwest Arkansas Broiler Rations

Percentages of corn-milo	Cost per cwt.	Saving over 100% corn
100- 0	$2.35	0c
75- 25	$2.29	6c
50- 50	$2.23	12c
25- 75	$2.17	18c
0-100	$2.11	24c

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S-W self loader emptying a box car.

Feed being transferred from rail car to bulk truck.

S-W self loader mounted on stake body.

- Handle deliveries efficiently, with one man.
- Pick up feed from rail cars, nearby towns.
- Remove unused feed from a customer's bin so that is can be replaced with a new formula or medicated feed for a sick flock.
- Start bulk deliveries without waiting for overhead bins to be installed or eliminate overhead bins in a bulk station entirely.
- Pick up grains from customer and bring them back to your mill for processing.
- Remove feed from cars that may have to be respotted or which may be delayed in unloading.
- Help a customer move his feed from old bins to a new poultry house.
- Load feed during a breakdown of bulk loading station elevator.
- Vacuum clean sections of your mill or help clean up customer's feed bins.

The Sprout-Waldron self loader . . whether it be an integral part of your standard or Economy Feed Piper pneumatic bulk truck, mounted on a stake or van body unit, or put to use in any one of a dozen different ways, provides you with a portable material handling device which saves time, money, and backbreaking labor . . and helps you provide the type of service needed to win and hold customers.

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October Poult Hatch Up 36% from 1959

WASHINGTON — October's commercial hatch of turkey poults of all breeds was 36% greater than for the same month a year ago. This report from the U.S. Department of Agriculture is one of the latest indications of significant expansion in turkey production in the new year.

USDA notes also that turkey eggs in incubators Nov. 1 indicate that the hatch of turkey poults of all breeds will be larger this November than last November.

The hatch increase for all heavy breed turkeys, comparing October, 1960, with October, 1959, was 34%. And for the light breed poult hatch the gain was 39%.

This year's January-through-October hatch of poults of all breeds stands 1% ahead of last year's same 10 months. The end of October marked the first time since April that the cumulative hatch for 1960 exceeded 1959's.

The hatch of heavy white breed poults, which has been greater each month this year than last year, was 20% higher in October, 1960, than in October, 1959—1,032,000 poults compared with 863,000. For the first 10 months of this year the heavy white breed hatch was 15% ahead of the same period last year—21,148,000 compared with 18,460,000.

The October, 1960, hatch of other heavy breeds (mostly bronze) of 282,000 poults was about 2½ times the seasonally light hatch of 114,000 in October, 1959. The hatch of 54,139,000 other heavy breed poults, January through October, 1960, was up 5% from this period in 1959.

USDA reports that the cumulative hatch of light breed poults, January through October, 1960, was down 31% from a year earlier. The light breed hatch was lower this year than the year before in each month during the first seven months, but in the three months since, production has been on the plus side.

Poultry Group Reports Random Sample Tests

MODESTO, CAL.—The California Poultry Improvement Assn., in a preliminary final report, says that the hen-day production of the 11th test floor birds was slightly higher than that of the 10th test floor birds in recently completed Random Sample Tests.

The 10th and 11th floor birds averaged 278 and 275 eggs, respectively. Cage production during the past year was 254 eggs, compared to 240 a year ago, but was four eggs less than that of the ninth test.

Livability among the 11th test hens was excellent, according to the report. During the 18-month period following one week of age, floor bird mortality was 7.2%, and that for cage birds, 9.5%. Egg size for the test just ended was a little larger than that of last year, but egg quality remained constant.

The final report will indicate repeatability estimates and least significant differences for most measurements. This statistical approach adds to the understanding of the various comparisons, for it is an accepted fact that differences between entries may be due to environmental effects as well as to genetics, say officials. The task is to separate the two influences so that some estimate can be made of the inheritance factor. Statistical analysis attempts to provide this estimate.

The Random Sample Tests of the State of California are conducted by the Poultry Improvement Commission, whose members are appointed by the Governor, plus three ex-officio members representing the state department of agriculture, the school of veterinary medicine of the University of California and the department of poultry husbandry, University of California.

RST WINNER—The Honegger entry of White Leghorns (random sample from Mortensen Hatchery, Petaluma, Cal.) which ranked first in the 11th California Official Random Sample Egg Production Test with an income over feed and chick cost of $4.96 per pullet at one week are shown above. These layers also ranked first in the three-year division with an average of $4.34.

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SELLIN' SAM — By Jim Zilverberg

"Oh, yes, Mr. Dunham's expecting you—he's out."

Report Success with 'Simplified' Diets

EAST LANSING, MICH. — "Simplified vegetable protein diets have been as good as more complex commercial-type rations in hen nutrition studies at Michigan State University," a report from the university states.

"For the past two years, we have successfully used a hen feed made only of corn, soybean oil meal, vitamins and minerals," said Jerome Yates, research assistant in the poultry science department. "This ration left out the more expensive animal proteins commonly used.

"Egg production and feed use by the hens on the simplified ration were as good as and sometimes better than conventional rations. And fertility and hatchability of the eggs produced were also equal to that of the common diets."

The poultry researchers said they are also adding different levels of antibiotics to both the conventional and simplified corn-soybean rations, and are adding various combinations of amino acids to low protein levels of the simplified ration. They are looking for "ways to develop more effective rations at lower cost."

In another hen nutrition study, the MSU poultry scientists have added various amounts of calcium to hen feed in an effort to increase thickness and quality of the egg shell. Stronger shells mean fewer cracked and broken eggs. So far, they have found that feeding more than the usual amount of calcium does produce a slight increase in shell thickness.

Hens used in these studies have been hybrid egg-type birds produced commercially, Mr. Yates points out.

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- **Service you will appreciate.**

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When a hog raiser has a scours problem...

WHAT DO YOU RECOMMEND?

Read how these men stopped the hog scours problem with nf-180

"... nf-180 is the product ..."

"We've never found anything like nf-180"

"nf-180 worked for us"

Roy Harrold, Beach City, Ohio, maintains 160 sows in his specially designed farrowing barn. At one time he had a tough scouring problem.

"My pigs started scouring at about 2 to 3 weeks . . . and then others began to get the problem younger and younger. It even went right down through the sows, and one sow gave it to another."

How Roy Harrold stopped his problem

"I got to talking with our feed man about the idea of protecting the pigs by treating the sows, and he said he'd see what Hess & Clark had on the idea. Hess & Clark suggested nf-180 . . . so he brought some down and we tried it. As far as I'm concerned, treating the sow with nf-180 is *the way* to prevent baby pig scours. It stopped my pigs from scouring completely."

The advice of his feed dealer and nf-180 helped Roy Harrold solve his scours problems. By following a policy of "first help the customer . . . then he'll help you," Mr. Harrold's feed dealer earned a steady customer and a friend.

Harl Thompson, Sesser, Ill., is another hog raiser who has had remarkable success preventing baby pig scours *by treating the sow* with nf-180. Before using nf-180 Mr. Thompson's problem was so serious that, "... if we saved 7 out of 11 or 12 pigs farrowed, we were fortunate."

How Harl Thompson stopped his problem

"We took pigs to a state laboratory. They ran cultures on the bacteria in the pigs and the tests showed that nf-180 was the product to use. We feed nf-180 a week before and two weeks after farrowing. Out of seven litters we first put on nf-180, we lost only one pig.

"We have never found anything like nf-180. This is the simplest program you can possibly devise. There is nothing we have found that will do the job as well as nf-180."

When a hog raiser comes to you with a scours problem, tell him about the success Harl Thompson had with nf-180. Explain the nf-180 feeding plan. He'll be satisfied with the program and satisfied with your service.

NT-6-6

Wilbur Siebrase, Waveland, Ind., tells of his success with nf-180 in stopping his scours problem. "Everything was going fine with my hogs until August, 1957, when the roof fell in. First a group of boars started scouring . . . then a group of gilts . . . then two sows in the farrowing barn. When the sows started scouring, their baby pigs also began scouring. Out of 78 litters, we lost over 200 pigs."

How Wilbur Siebrase stopped his problem

"We were told about nf-180 by our feed dealer. We tested it by feeding nf-180 to the sows before and after farrowing. We produced 188 live pigs out of 202. For the first time in months there was no sign of scouring. nf-180 worked well for us. In fact, it was the difference between our staying in the hog business or having to sell out."

Learn more about how you can get new customers and sell more feed with the help of nf-180. It's simple. Just add nf-180 to provide 150 grams furazolidone per ton in your regular sow ration. Feed it one week before and two weeks after farrowing. For complete information and research data on the nf-180 program write to

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JOE BROOKS

BY AL P. NELSON

Merchandising Conditions Change

About 45 feed dealers showed up for the dinner meeting at the White Swan Dining Room. It was a special meeting sponsored by the Douglas District Feed Club. It had been advertised by President Gil Henderson as a meeting to discuss "modern merchandising methods" with Joe Brooks in charge of the discussion.

"I hope this isn't another one of those general pep meetings," one dealer muttered to another while eating pumpkin pie. "One of those 'go home and work harder deals.' The idea is all right, but they never tell you what to work harder at."

"Well," said the other dealer, "I like to eat. If the meetin' ain't no good, at least I had a meal out. And I like a change from the old lady's cookin' now and then."

The other dealer laughed. "Well, that's one way to look at it."

At this point Mr. Henderson rose to his feet. He was a tall, spare fellow with greying hair and sharp grey eyes. "Men," he said, "all of us know we are living in a merchandising era that has seen many changes. To make a profit, the dealer and the custom mill owner needs to know what's going on. He also needs to know what he can do to keep down his costs, boost his sales and profit. I hope this meeting helps all of us in this regard. Joe Brooks is chairman of the merchandising discussion. Joe, take over."

The big, brown haired dealer got to his feet and smiled. "Fellows, this isn't a calamity meeting. Sure, we've got problems, all of us, but I hope that tonight we'll bring out enough new ideas to stimulate thinking to the point where all of us will go home with new ideas to mull over. Right now I am going to ask for volunteers to tell us what they have done to boost their sales volume, cut costs or extend profitable service."

A short, red faced dealer from over Cedarville way, Rodney Baird, got up. "You mean, Joe, you are asking us feed men to lay bare the new ideas we have and let others share in what we know?"

Joe nodded. "Yes, we're expectin' something like that."

Mr. Baird grunted. "I'll be damned if I'm gonna give my ideas away." And he sat down. "Let someone else be a sucker."

There was an embarrassed silence, and then Joe spoke up. "Well, men, it looks like I've got to start out with my own experience. I don't like to be first, but here goes."

Joe then went on to tell the dealers how he had instituted a barn spray service the last two years. This service proved profitable, he said, and through contacts with new farmers on barn spray deals, he also landed some new dairy feed accounts. Then he expanded the spray service to a summer weed spray service with a high school teacher in charge. This worked out profitably. The past summer, he said, he added tree spraying to his service, and found lots of $1-$5 takers, depending on the size of the tree.

"These additional services which were needed in my area, helped me increase sales of farm chemicals and won some new feed customers," Joe said. "I'm looking for more ideas like this."

Jim Peterson, a dealer from Beecher, got up. "I helped 35 independent egg producers in my area set up an egg marketing plan. I handle and sell all supplies and feed, although they can buy elsewhere if they wish. I went around with one big egg producer and we lined up hotels, restaurants and other places for markets for quality eggs. Of course, we have to sell single cases and also split cases sometimes. But we are breaking in. Just the other day we were contacted by a big chain buyer. We have a chance of hooking up with him so that he'll take all our weekly output. These egg producers are happy; they see what can be done and my business is increasing."

There was a murmur of interest as Mr. Peterson sat down. "Wonderful," Joe said. "Anybody else?"

Uses Own Feed

A tall, thin custom mill man got up. "I'm raisin' broilers," he said. "I got two men in my mill. Now I use lots of the feed I produce, and can get 100% work production out of the two men by shifting them from mill to broiler care, etc. No idle time any longer."

"That's what I'm doing," said Oscar Andrae from the western edge of the county. "I've added a lumber and building supply department. I've got two men, too. The feed mill and lumber yard keep them busy. When I had just the feed mill I couldn't keep two men. One man sometimes wasn't busy all day. I like this better and I'm makin' more money."

A tall, slow moving man, smoking a cigar got up. "I'm Mike Hoeft from the eastern end of the county. I've gone after the big feeder business, in addition to serving the small feeder," he said. "If a big feeder will take 20 tons of feed from me at a time, I'll sell him ingredients at cost, I'll grind, mix, pellet and haul the feed to him for $11 a ton. That's cheaper than he can perform a similar service for himself on his farm. He can't get as low prices on ingredients as I can and he doesn't want to invest in pelleting machinery. I'm well satisfied at the number of large feeders I'm getting this way. I never could touch their business before."

Business Sidelines Pay Off

The discussion went on and on. One dealer said he raised beef cattle as a sideline, and used the project as a demonstration, too. Another raised hogs. The establishment of a large farm supply store next to the feed mill and stocking it with numerous farm hardware and other items, gave one dealer a sizable boost in volume. A liquid fertilizer plant added volume and profit for another dealer. So did a dry fertilizer bulk plant for another. A dealer who added farm machinery said the extra volume helped him immensely.

One feed man who had a stationary mill, bought a mobile mill to increase the territory he served. He said he profited considerably. The manager of a cooperative mill said that he and four other cooperatives hired a full time outside salesman, with the man putting in one day a week selling for each mill. The experiment was working out well, he stated.

At one point in the discussion, Joe asked, "Many of you have added related and other services and lines, in how many instances have such services exceeded your annual volume of feed business?"

There were none. In fact, most of the men with new projects said that feed volume still acounted for 65-90% of sales. "But that extra 15% of volume I get from my related line, man, how-that helps," said one dealer. "It's the difference between a small profit and a better one."

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BROWER'S new Automatic Feeding System offers your customers the most efficient method yet devised to get faster, more profitable gains with a minimum of time and labor! Once the bulk tank is filled, the Brower Auger takes over all the work — a sales natural for you!

You also make more profit through bigger volume sales to your bulk customers; lower your overhead costs; provide more efficient customer service; have more time to develop new business.

Brower's Automatic Feeder never forgets . . . never neglects . . . keeps each feed hole filled 24 hours a day without supervision. Completely automatic — no time switch . . . no manual on-off switch. Timid pigs get their chance at a full trough . . . all hogs eat more . . . make faster, more profitable gains. Easy and economical to install . . . designed and engineered to last for years. Feed Lot Automation using the BROWER System is the key to **extra** profits for both the feed dealer and the hog raiser!

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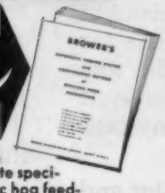

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USDA Reports Sheep, Lambs on Feed

WASHINGTON—Sheep and lambs on feed for market in seven major feeding states totaled 2,400,000 head on Nov. 1, 1960, the U.S. Department of Agriculture announced.

Of the total number on feed, 2,111,000 head, or 88%, were placed on feed during September and October. The remaining 12% were placed on feed before Sept. 1.

A breakdown of sheep and lambs on feed Nov. 1 in the seven states follows: Under 60 lb., 127,000 head or 5% of the total number on feed; 60-79 lb., 1,317,000 head or 55%; 80-99 lb., 861,000 head or 36% and over 100 lb., 95,000 head or 4%.

TABLE 1. Sheep and Lambs on Feed, Selected States, Nov. 1, 1960

State	Placed on feed Before Sept. 1	Placed on feed During September & October	Total on feed
	1,000 head		
Iowa	77	453	530
S. Dakota	33	177	210
Nebraska	46	404	450
Kansas	16	204	220
Texas	14	136	150
Colorado	21	499	520
California	82	238	320
Total 7 states	289	2,111	2,400

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that utilize feed efficiently—grow well—perform well in the laying house.

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from Coccidiosis in the laying house. Immunity, once developed, continues through the useful life of the laying bird.

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Above: Labconco Kjeldahl protein apparatus in the new E. M. Peet Mfg. Co. laboratory.

Labconco Crude Fiber Condenser (left) and The Goldfisch Fat Extractor in the E. M. Peet Laboratory.

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EXTERIOR PLANT VIEW—An exterior view of the new $85,000 feed mill constructed by the Sibley (Ill.) Complete Feed Service. Tanks in foreground contain four registered feeds made by the firm. Feed is weighed and loaded on an inside drive.

New Feed Mill Serves Farm Tenants, Other Customers

By Al P. Nelson
Feedstuffs Special Writer

A new $85,000 feed mill serving 35 livestock lease farmers of the Sibley Farm Service Corp., Sibley, Ill., as well as other feed customers, was recently opened for business. The mill is known as the Sibley Complete Feed Service. Manager of the mill is Cully Slocum who also owns a custom mill at Mahomet, Ill.

The Sibley Farm Service Corp. is owned by heirs of the original Hiram Sibley estate. There are 13,500 acres in the big estate. Figures for 1958 show that tenants raised 15,000 hogs and 1,500 cattle. Livestock figures for 1959 and 1960 are approximately the same, advises Mr. Slocum. Much of the mill-produced feed is sold to tenants.

On the premises near the new feed mill are two long wooden corn cribs built in 1910 with a capacity of 130,000 bu. These are said to be the largest wooden corn cribs in the world. Tenant-raised corn is stored in these cribs at no cost to the tenants—some is shelled for use in feed or elevator operations.

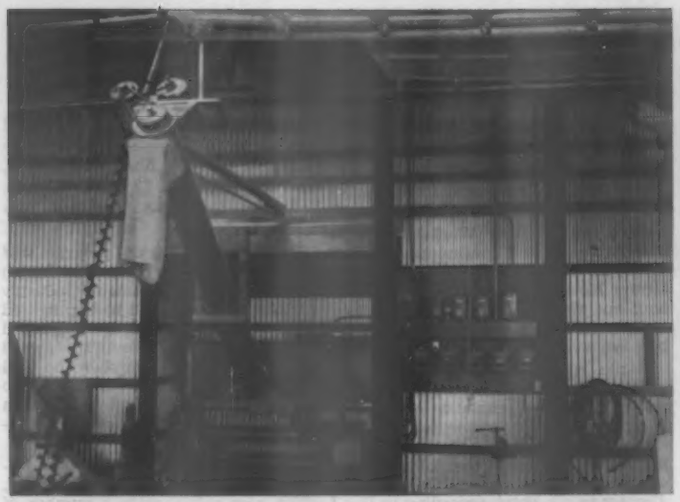
The feed firm, a Master Mix dealer, is presently erecting a 5,500 bu. Butler bin for corn storage of non-tenant grain in a grain bank plan, says Mr. Slocum. This bin, including aeration equipment, has a hopper bottom and augers direct into the mill.

Two Drive Entrances

Equipment for the mill was furnished by the Albright Equipment Co., Mattoon, Ill., which designed the plant. There are two drive entrances at the mill, one at each side of the 75 x 34 ft. structure. The west end drive has a double lane. One lane is for custom mix loadout and the other for weighing and loading out the firm's four registered hog feeds. These feeds are manufactured in volume and stored in four Columbian metal

CUSTOMER DEMONSTRATION—Manager Cully Slocum shows customer and young son how bulk feeds are weighed at Sibley Complete Feed Service mill.

DOUBLE LANE DRIVE—Set of doors in foreground opens onto double lane drive that handles traffic coming and going at the Sibley Complete Feed Service mill. Customer flow and bulk truck loading of registered feeds move through left hand drive with 14-ft. high door; right hand drive (12-ft. door) handles customer loadout of custom mix.



FEED MOVEMENT—Auger in foreground moves registered feed from storage tanks in background to Winslow scale for weighing and loadout.

tanks, each holding 14½ tons. The storage setup has both top and bottom augers.

When a farmer comes in for feeds, or when the firm's 6-ton Pamco truck is to be loaded for delivery, the truck can be weighed on the 20-ton 34-ft. Winslow scale in this section of the drive. Then the auger is lowered and the scale set for the amount of feed needed, etc. The customer receives a stamped weight ticket of the amount of feed in the truck.

In this double lane drive, the feed firm can load out both ground and bulk feeds, side by side, at the same time. Grist to be ground comes in at a drive on the other side of the mill.

"We like this arrangement quite well," reports Mr. Slocum. "Our entire mill floor is open. Thus we can observe mixing and loading operations very easily—no need to go outdoors to weigh bulk feed—it can be done from the inside."

The mill is equipped with a Gridley hoist, two Kelly Duplex mixers, one a 3-ton and the other a 2-ton; a 60-25 h.p. Bryant hammermill, a Peerless roller mill for cracking corn and crimping oats, two 1,500-bu. Universal elevators and a 10-ton Winslow scale for weighing custom grinding.

The feed mill has 14-ft. high overhead doors for the registered feed loadout section, and 12-ft. doors on the custom mix loadout and the grist receiving drive. All doors have Raynor control.

There are two Campbell grain dri-

(Turn to FEED MILL, page 76)

MIXING DEPARTMENT—Pictured here is the mixing department at Sibley (Ill.) Complete Feed Service mill. In background at right is auger used for loadout of registered feeds. Double lane loadout drive runs just adjacent to far side of mixing bin.

STORAGE TANKS—These tanks are used to store concentrates at the Sibley (Ill.) Complete Feed Service mill. The firm permits at $4 discount per ton on bulk concentrate or complete feeds.

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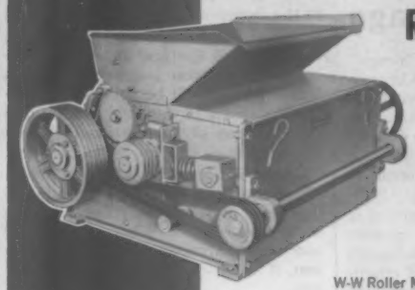

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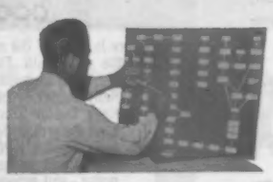

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Turkey Federation Convention Planned Jan. 4-6 in Chicago

CHICAGO—It's "Back-to-Chicago" for the 23rd National Turkey Convention, according to announcement from the National Turkey Federation. The convention will be held at the Conrad Hilton Hotel where all activities with the exception of a ladies' luncheon will be held.

The Turkey Industry Exposition is expected to be a center of interest to convention visitors. Manufacturers and distributors of all types of equipment, supplies and services required by the turkey industry will display their wares. In addition, the nation's leading breeders, hatcherymen and egg producers will have their exhibits.

More than 150 exhibitors had been allotted space by mid-November with very little remaining.

After two days of business meetings the general convention will officially open with the kickoff luncheon in the Boulevard Room of the Conrad Hilton Jan. 4.

Jan. 4 will feature the officers' reception and open house program. A buffet dinner will be followed by entertainment and dancing, all through the courtesy of the National Turkey Federation.

Jan. 5 is the big day for the ladies. The major activity will be the ladies luncheon and fashion show at Marshall Field & Co. While around 800 can be accommodated at this luncheon, it is anticipated it will be a sell-out.

Climaxing the convention Jan. 6 will be the annual banquet in the Grand Ballroom at the Conrad Hilton. Following the banquet will be another full evening of entertainment and dancing.

Special programs with workshops, conferences and clinics of many types will be conducted throughout the convention. Some of these are scheduled as follows: "Research Clinic," Jan. 4; "Merchandising Clinic," Jan. 5; "Breeder Flock Workshop," Jan. 6 and 7, and "Turkey Disease Clinic," Jan. 6.

A special feature of the program will be the "Breeder Workshop" beginning Jan. 6 and continuing Jan. 7. The Jan. 6 program at the Conrad Hilton Hotel will be open to everyone, but the Jan. 7 session will be strictly limited to 40 pre-registered persons, who will participate.

While special arrangements have been made at the Conrad Hilton Hotel for a sufficient number of rooms to accommodate everyone and special low rates have been obtained, those planning to attend the convention should send their room reservations directly to the hotel, according to the National Turkey Federation.

Set Dates for Animal Health Institute

DES MOINES—The 21st annual meeting of the Animal Health Institute will be held April 24-26, 1961, in Washington, D.C., Dr. Guy A. Railsback, institute president, announced.

Dr. Railsback said the program will feature discussions by animal health authorities in government, industry and education and will be highlighted by the institute's fifth Distinguished Service Research Award. The award is presented to a scientist in the field of animal health and nutrition who has distinguished himself in this area of service within the current five-year period.

The Mayflower Hotel will be headquarters for the three-day meeting, which also will include a number of entertaining social events.

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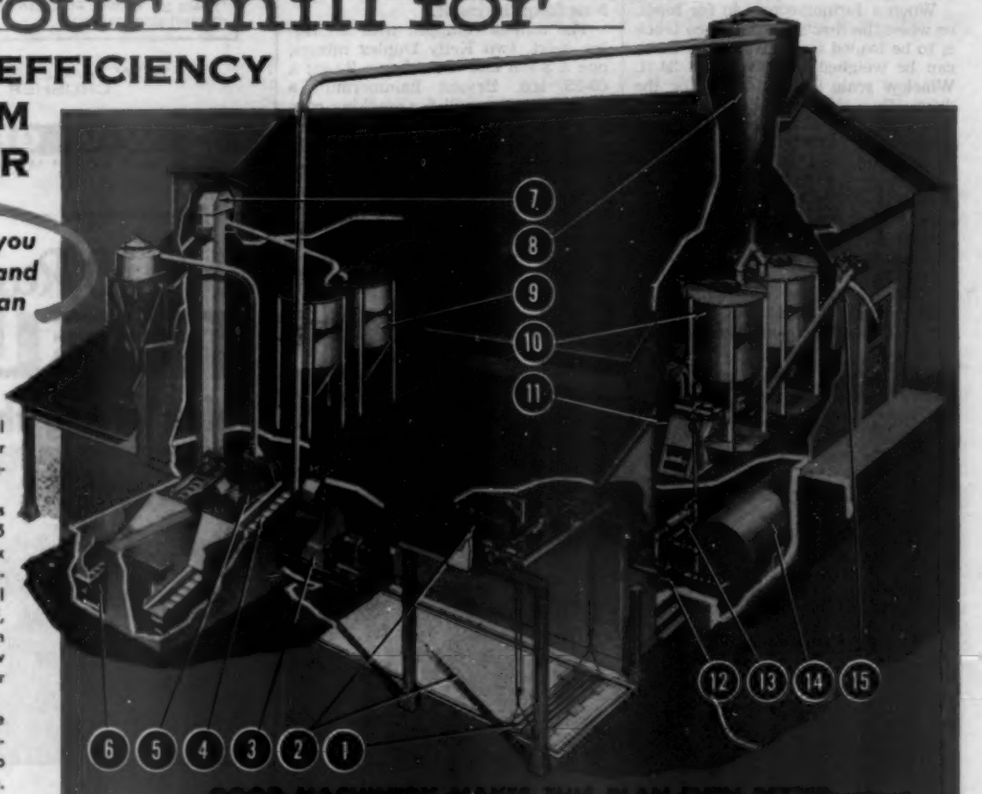

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☐ Regular Corn Sheller
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Missouri Producers Told Lambs Gain Faster on Creep Ration They Like

COLUMBIA, MO. — Producers attending the University of Missouri Sheep Day were told that suckling lambs ate more and gained faster when given a creep ration they especially liked.

Researchers also told of studies showing that the time when lambs are fed affects the gains registered and that feeding of high energy rations resulted in faster, more efficient gains.

In addition to research reports on feeding, breeding and management, the visiting livestock producers saw animals being used in current test work at the university.

Guest speaker for the event was Dr. R. H. Dutt, sheep researcher at the Kentucky Agricultural Experiment Station. Dr. Dutt discussed what can be done about summer sterility in sheep.

University staff members appearing on the program included: Dr. C. V. Ross, W. H. Sellers, John Rea, J. R. Brooks, Dr. R. L. Preston, Dr. A J. Dyer and Glenn Grimes.

Fed Ration They Liked

Dr Ross, associate professor of animal husbandry, told the group that "suckling lambs ate more and gained faster when given a creep ration they especially liked" in a University of Missouri test.

Research work in 1958-59 showed that suckling lambs preferred certain feed ingredients and mixtures of ingredients. A pelleted mixture composed of 60% corn, 30% soybean oil meal and 10% wheat bran was the most acceptable of several formulas compared, Dr. Ross indicated.

To test this ration under practical conditions, one lot of lambs was fed shelled corn free choice. Another lot got the well-liked mixture.

Lambs on the mixture ate 2¼ times as much feed and gained 20% faster than those on shelled corn. Actual average daily gain was .61 lb. compared to .51 lb. The lambs on the mixture also had more bloom and graded higher at the end of the test.

Further work on palatability indicated that lambs like this mixed ration even better if 10% dehydrated alfalfa meal is substituted for the 10% soybean oil meal. Adding corn syrup as a sweetener did not increase acceptability.

In this work where lambs were given their choice of several mixtures, they ate five time as much pelleted ground shelled corn as whole shelled corn. This is further evidence that pelleting improves palatability, Dr. Ross said.

Timing Important

Dr. Preston told those attending the meeting that gains on fattening lambs seem to be affected by when the lambs are fed as well as what they are fed. The assistant professor of animal husbandry described a test in which fattening lambs were fed at different times of day.

Four pens of eight wethers each were put on test. Daily gains were greatest, an average of .66 lb. per day, where lambs were fed concentrate in the morning and evening, with roughage fed at noon. These lambs also graded the highest, carried more marbling in relation to outside fat cover, and made their gains quite efficiently.

Next best gains, .6 lb. per day, were made by lambs fed a complete pelleted ration twice a day. The other two lots, one fed roughage in the morning and concentrate in the evening, the other fed roughage in morning and evening with concentrate at noon, did not gain or grade as well as the two lots mentioned earlier.

"These are the results of only one experiment," Dr. Preston stressed. "They look very interesting but the experiment needs to be repeated before any recommendations can be made," he concluded.

Dr. Ross reported on a study which showed that lambs on high energy rations made faster and more efficient gains than lambs on low energy rations. He also commented that lambs on high energy rations had better carcass yields. These results were similar to those of another test a year earlier, he said.

Protein levels ranging from 11-14% were also compared in this test. In general, gains increased as protein levels went up.

Energy and protein levels were changed by adjusting the amounts of ear corn, alfalfa hay and soybean oil meal in the ration. The low energy, 11% protein ration contained 42.5% ground ear corn, 50.1% alfalfa hay, 2.4% soybean oil meal and 5% molasses.

The high energy contained 14% protein ration, 50.2% ground ear corn, 32.5% alfalfa hay, 12.3% soybean oil meal and 5% molasses.

All lambs on low energy rations averaged .68 lb. daily gain using 6.7 lb. feed per pound of gain. High energy rations gave improved performance: .74 lb. average daily gain on 5.7 lb. of feed per lb. of gain.

Dr. Ross said lambs showed more response to changes in energy levels than to protein levels.

Stilbestrol implants boosted average daily gain by about one-fourth with no effect on carcass yield. Add-

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ing enzymes to the ration gave no significant benefit, Dr. Ross noted.

Protein Level

Mr. Rea reported that lambs on high levels of protein gained faster on less feed than similar lambs on low protein rations. However, lambs implanted with the hormone hexestrol did not show a response to higher protein levels.

Three levels of protein were used in this study: 11, 13 and 15%. Half of the lambs on each protein level received hexestrol implants in the ear.

Average daily gains for the lambs not implanted were: 11% ration, .32 lb.; 13% ration, .43 lb., and 15% ration, .44 lb. For implanted lambs, gains for the rising protein levels were .55 lb., .52 lb. and .53 lb. Feed efficiency tended to improve with the higher levels of protein.

All implanted lambs averaged .53 lb. daily gain compared to .41 for those not implanted. Researchers found little difference in carcass grade and yield.

Adding tapazole to the ration failed to stimulate gains, improve feed efficiency or increase fattening, Mr. Rea said. Tapazole is a drug that slows activity of the thyroid gland.

Wintering Ration

A corn silage-soybean oil meal ration containing 11.5% protein appeared to be adequate for wintering ewes, reported Dr. Ross. His report was based on the first of a series of tests to determine the best protein level for wintering with soybean oil meal.

Ewes on the 11.5% protein ration performed as well as those getting 12.8%. However, a 9.2% protein ration appeared to be too low for best results. The ewes began slipping their wool about six weeks before lambing and were in thin condition.

Ewes on the higher levels of protein made bigger gains than those on the low protein ration. They also sheared slightly heavier fleeces and gave birth to heavier lambs.

The higher protein rations resulted in lambs averaging 51-52 lb. at 10 weeks of age. Lambs from ewes on the low protein ration averaged 48 lb.

Missouri researchers reported no significant advantage from treating ewes with cobalt bullets three weeks before lambing.

Ewes treated with cobalt made slightly greater average gains during late pregnancy than non-treated ewes, according to Dr. Ross. However, the differences were not consistent, he says.

Birth weights of lambs were about the same from both groups of ewes. Weights at 10 weeks of age were slightly greater for lambs out of ewes treated with cobalt, but again, the differences were not significant.

The ewes were fed corn silage plus a supplement in dry lot. After lambing they were grazed on rye, wheat and bluegrass.

Farm Income, Costs Likely to Remain Stable During 1961

WASHINGTON—The general easing of inflationary pressures suggests that net farm income, cash receipts and operating costs are expected to be about the same in 1961 as they have been during the past two years, according to a U.S. Department of Agriculture report.

In the first three quarters of this year, realized net farm income was at a rate nearly as high as in the same period of 1959. This improvement in farm income prospects, above expectations earlier this year, stems largely from increased output of wheat and soybeans, as well as from a smaller-than-expected increase in production expenses.

Reflecting record output this year, the volume of farm marketings is running about 3% above 1959, and may increase further in 1961 if growing conditions are average or better. Livestock production will likely increase in 1961. Cattle prices probably will continue to decline under the impact of larger marketings and result in some further decline in cash receipts from cattle.

Marketings of hogs will continue below a year earlier well into next year, reflecting the reduced pig crops this year, and prices are expected to remain relatively high well into 1961. However, farrowings may turn up next spring and larger marketings than a year earlier are in prospect in the closing months of next year.

For all of 1961, hog prices probably will average at about the 1960 level. Prices for dairy products and eggs are expected to hold above a year earlier well into 1961.

Total cash receipts from farm marketings next year are expected to hold steady, too. Large proportions of the heavy 1960 crops will be marketed in 1961, and so the total crop marketings for the year could be as large as this year. Crop receipts could run about the same, too, with little change in average prices expected.

Through September, 1960, cash receipts from farm marketings totaled almost 1% above the comparable period of 1959. An increase of about 3% in the volume of farm marketings more than offset a 2% decline in average prices received by farmers.

Farm operators' production costs through September this year are estimated to be only slightly larger than in the same 1959 period. The index of prices paid for production items, interest, taxes and wage rates was only about 0.5% above a year earlier.

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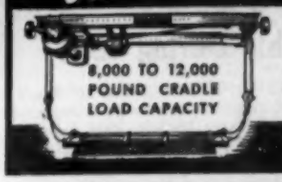

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Ultra-Sonic Instrument Used in Colorado's Turkey Quality Studies

FORT COLLINS, COLO. — An ultra-sonic device known as a somascope is now being used at Colorado State University in a research project to determine what role fat plays in the market grade of turkeys.

Dr. Robert A. Moreng, chief poultry husbandman with the CSU agricultural experiment station, began the study four years ago. Previously, he had been using specific gravity and other measurement methods to determine fat content of turkey carcasses.

Now, for the first time, Dr. Moreng is using the somascope to measure the subcutaneous fat. This fat, lying directly under the skin, is an indicator of finish on the bird, and finish largely determines market grade.

"If there is a good layer of fat, the bird has a yellow or cream colored carcass which is likely to be grade A, provided there are no other flaws such as broken bones, bruises, tears or poor conformation. A turkey with a thin layer of subcutaneous fat will have a blue color, which is the color of the tissue," Dr. Moreng explains.

The CSU poultry scientist wants to find out exactly how much fat is needed to make a grade A turkey carcass. The somascope is being used on both live birds and dressed carcasses to see how accurately the sound waves will measure fat thickness.

If the somascope proves accurate in measuring the fat of a turkey, it could be used on live birds to determine if they have enough finish to be slaughtered as grade A, or if they require more feeding. Dr. Moreng says the machine also might be used on the carcass to determine fat thickness for grading and eliminate human error, thus putting grading on a more scientific basis.

SOMASCOPE—An ultra-sonic device, called a somascope, is used to determine what role fat plays in the market grade of turkeys. Prior to testing with the somascope, Colorado State University researcher Willard A. Whittet measures specific gravity to determine the fat content of turkey carcasses.

60,000 BU. GRAIN DESTROYED

HAZEN, N.D.—A fire of undetermined origin swept through the main elevator building and annex of the Hazen Grain Co. here destroying between 50,000 and 60,000 bu. of wheat, oats, barley and flax, it was reported. Jerry Blum, manager, said he had no immediate estimate of total damage. The roof on a quonset building where 59,000 bu. of grain were stored was damaged, but Mr. Blum said most of the grain probably could be salvaged from that building.

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Energy Intake and Laying House Temperature Influence Egg Numbers and Production Efficiency

"Control of the environment of the laying house can result in the use of higher fiber feeds and also result in a reduction of feed costs for egg production."

By Prof. C. F. Petersen
University of Idaho

The major purpose for energy in poultry feeds is to furnish adequate fuel as carbohydrate, fat and excess protein to maintain the normal body activities of high producing hens. Energy is used to maintain normal body temperature and it is well recognized that low environmental temperatures increase the amount of energy needed for body maintenance and high egg production. An inadequate supply of energy will result in reduced egg production.

It is also well recognized that the total feed required for maintenance and for egg production decreases as the energy content is increased, because less volume of feed is needed to supply the same amount of energy or number of calories. Feed intake and energy needs are also increased when the environmental temperature decreases, as occurs in much of the northern areas of the United States during winter months. Based upon the data of Hill et al. (1956) and Harms et al. (1957), it appears that rations containing 700-740 calories of productive energy would be marginal for maximum egg production, especially during cold winter weather. This would indicate that rations composed of barley, oats, mill feeds, and other feeds of similar energy content would not supply adequate energy for maximum production. In contrast, Berg et al. (1956) did not find that rations containing a high percentage of low-energy ingredients resulted in reduced egg production. This extensive work comprising nine experiments was conducted over a seven year period. The results may have been due to several factors including: (1) more moderate climatic conditions which prevail on the western coast of Washington, (2) in most of their experiments, egg production was not maintained at an extremely high level (70 to 75%), which might have resulted in reduced needs for energy and (3) most of their comparisons did not employ the maximum difference in energy that can be obtained with common feed ingredients.

Two experiments recently conducted at the Idaho Agricultural Experiment Station are being reviewed here summarizing results obtained when two rations with a wide difference in the energy content were fed to high producing White Leghorns under both variable and controlled laying house temperatures.

TABLE 1. Composition of Low and High Energy Rations Used in Experiment 1*

Ingredients	Low energy lb.	High energy lb.
Ground barley	61.0	...
Wheat bran	15.0	5.0
Ground corn	...	50.0
Ground wheat	...	20.0
Dehyd. alfalfa meal	2.5	2.5
Soybean meal (solvent)	9.0	10.0
Herring fish meal	2.0	2.0
Meat meal (50%)	4.0	4.0
Bone meal	3.0	3.0
Oyster shell flour	2.5	2.5
T. M. salt	0.5	0.5
Riboflavin conc. (227 mg./lb.)	0.5	0.5
Vitamin A & D oil (3,000 A, 600 D)	0.15	0.15
Manganese sulfate, gm.	10	10
Total	100.15	100.15
Average composition: Calculated		
Per cent protein	16.2	15.9
Per cent fiber	6.5	3.3
Per cent calcium	2.4	2.4
Per cent phosphorus	1.2	1.0
Productive energy, cal./lb.	646	912
Metabolizable energy, cal./lb.	1065	1326

*The same rations except for a slight reduction in total protein were used in Experiment 2.

EXPERIMENT 1 TESTS TWO ENERGY LEVELS AND TWO FORMS OF FEED—Each of the two all-mash rations used in Experiment 1 are shown in table 1 and were fed to four pens of 70 pullets each for a 10-month period from October into July of the following year. The grain portion of the "high-energy" ration was supplied by ground corn and wheat, whereas ground barley was the major energy source in the "low-energy" ration. There was a difference of approximately 260 calories between the two rations, expressed either as productive energy or metabolizable energy. These values are also shown in Table 1. However, based upon productive energy, the low-energy (barley) diet contained only 70% of the energy of the high-energy diet whereas, based upon metabolizable energy, the barley ration contained 80% of the caloric energy of the corn-based ration.

Each ration was fed as all-mash and also as crumbled pellets to duplicate pens of birds. The results of this experiment are shown in Table 2. A high rate of egg production was maintained in all pens, which is essential to measure energy needs in terms of application to present-day feed costs in relation to economical and profitable egg production.

Both energy level and form of feed influenced egg production. The high-energy ration resulted in a significant improvement when the two energy levels are compared, irrespective of form of feed. The high-energy ration not only improved egg production, but also resulted in a marked and significant reduction in feed consumption and feed required per dozen eggs. These birds also gained significantly more in body weight during the laying year.

Concentrating the feed by pelleting and feeding as crumbles proved ben-

(Turn to page 41)

C. F. Petersen

AUTHOR—Prof. Petersen's major interest in research work at the University of Idaho, Moscow, has included studies of requirements for riboflavin, vitamin B_{12}, unidentified growth factors, calcium for egg production and energy requirements for egg production under varying laying house temperatures. He was employed by Albers Milling Co., Seattle and Bellingham, Wash., after graduating from college and before service in the army in World War II. Prof. Petersen joined the poultry department staff at the university in 1944 and two years later was awarded the M.S. degree with a major in poultry nutrition and agricultural chemistry.

FIGURE 1—(Experiment 2) This figure shows the average percent egg production and weekly maximum and minimum temperatures for uniform and variable temperature environments.

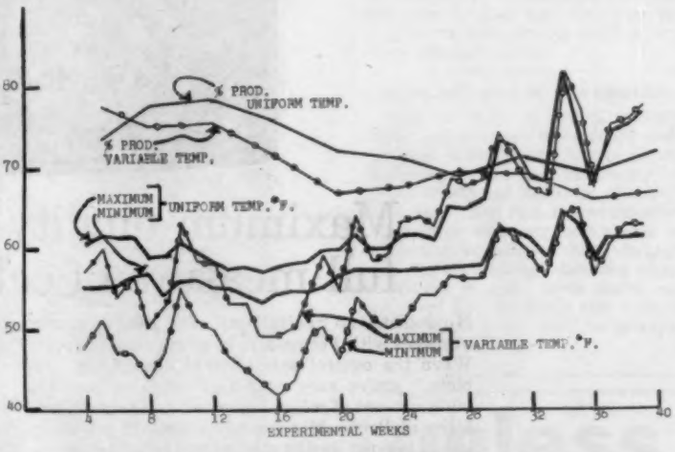

TABLE 2. Experiment 1—Performance of White Leghorn Hens When Fed Low and High Energy Rations as Mash and Crumbled Pellets

Energy level	Form of feed	Average % egg prod.	Av. lb. feed per bird per 4-wk. per.	Av. lb. feed per doz. eggs	Av. lb. gain in body wt.	Av. egg weight oz./doz.	Per cent mortality	Per cent litter moisture
Low	Mash	68.2†	7.98	5.90	0.73	25.5	7.05	31.1
Low	Crumbles	70.8†**	8.65**	6.24	0.75	25.8	12.91	32.0
High	Mash	72.8†	7.72	4.55	0.84	25.7	6.42	31.1
High	Crumbles	71.3†	7.84	4.72	0.89	25.7	12.85	30.6
Low	Both	69.5‡	8.31**	5.13**	0.74	25.6	10.38	31.5
High	Both	72.0‡**	7.78	4.63	0.87*	25.7	9.64	30.9
Both	Mash	70.5‡	7.85	4.78	0.78	25.6	7.14	31.1
Both	Crumbles	71.0‡	8.25**	4.98**	0.83	25.7	12.88	31.3

†Average value for two replicates.
‡Average value for four replicates.
*,**Significantly different at the 5% and 1% level.

TABLE 3. Influence of Energy Level, Form of Feed and Ration Density Upon Feed Consumption and Calorie Intake

Energy level	Form of feed	Density: gm. per liter	Liters feed consumed per bird per day	Calories consumed per bird per day
Low	Mash	551	0.235	186
Low	Crumbles	612	0.224	198
High	Mash	620	0.196	247
High	Crumbles	681	0.185	257

TABLE 4. Experiment 2—Summary of All Composite Data for Each Experimental Variable Tested

Experimental treatment	No. birds	Per cent egg prod.	Lb. feed /bird/ 4-wk. period	Lb. feed per doz. eggs	Lb. gain in body weight	Egg weight oz./doz.	Albumen quality H.U.	Per cent mortality	Per cent litter moisture
Energy									
Low	320†	71.6	8.17**	4.90	0.42	25.4	81.5	7.00	43.9
High	320	71.6	7.51	4.58**	0.62**	25.7	81.8	7.33	37.2
Form									
Mash	320	70.8	7.69	4.67	0.45	25.5	82.1	6.67	40.0
Crumbles	320	72.5**	8.00*	4.72	0.59**	25.6	81.2	7.67	41.0
Temp.									
Variable	320	70.6	7.98*	4.85	0.55*	25.7	81.4	8.00	42.9
Uniform	320	72.7**	7.70	4.54**	0.49	25.4	81.8	6.34	38.2

†Four replications of 80 birds each.
*,**Significantly different at the 5% and 1% level.

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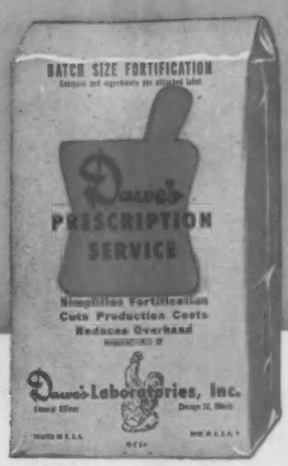

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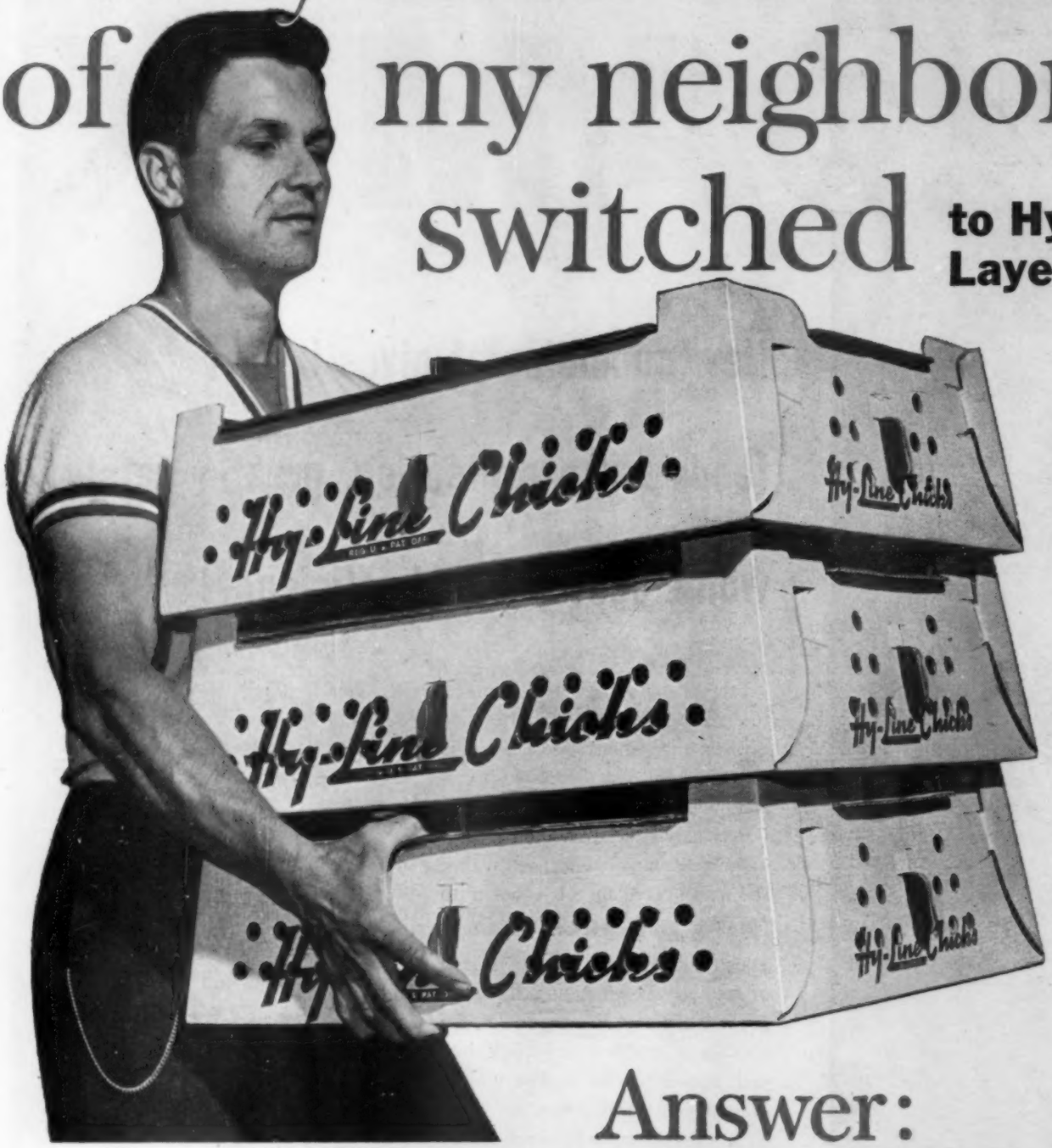

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eficial with the low-energy ration, but not with the high-energy ration. Feeding the high-energy ration as crumbles actually resulted in increased feed consumption without improved egg production which resulted in a reduction in feed efficiency. However, when the low-energy ration was fed as crumbles a significant improvement resulted in egg production—equal to the high-energy ration. Feed consumption was also significantly increased by pelleting and crumbling which was apparently necessary in order to permit adequate energy intake for maximum production. The birds apparently consumed adequate amounts of the crumbled low-energy feed based upon the egg production obtained. Also, as is shown in Table 3, the volume of feed consumed was greater for the birds fed the low-energy ration as mash which would indicate that the crumbled-fed birds could have consumed more if their requirements had not been satisfied. Egg weight and mortality of the laying hens were not influenced by either energy level or form of feed.

A major factor in profitable egg production is producing a high percentage of nest-clean eggs. Low-energy rations result in an increase in water consumption which might result in greater moisture content of litter and could increase the problem of producing clean eggs. Although the average litter moisture values given in Table 2 do not indicate any difference in the moisture content of the litter, this is primarily the result of the data being obtained from composite samples of all litter in each pen under a built-up or deep litter management program. Actually there was a marked difference in the condition of litter between pens fed the two energy levels. The low-energy ration resulted in very damp and caked surface litter which required weekly stirring. This was serious not only for production of clean eggs, but could increase disease problems.

UNIFORM TEMPERATURE CONDITIONS AND ENERGY LEVELS

TABLE 5. Experiment 2—Summary of Data by the Influence of Form of Feed and Temperature Treatment Upon Both Low and High Energy Rations

Energy	Treatments: Form	Temp.	No. birds	Per cent egg prod.	Lb. feed /bird/ 4-wk. per.	Lb. feed per doz. eggs	Lb. gain in body weight	Egg weight oz./doz.	Albumen quality H.U.	Per cent mortality	Per cent litter moisture
Low	Both	Variable	160	70.6	8.30	5.04	0.46	25.5	81.3	5.33	46.3
		Uniform		72.7**	8.04	4.74	0.38	25.3	81.6	8.67	42.4
	Mash	Both	160	69.5	8.07	4.98	0.32	25.4	81.8	4.67	44.1
	Crumbles		160	73.7**	8.27	4.81	0.53**	25.5	81.1	9.33	43.7
High	Both	Variable	160	70.5	7.66	4.66	0.64	25.9	81.5	10.66	40.0
		Uniform	160	72.8**	7.36	4.34	0.59	25.4	82.8	4.00	33.7
	Mash	Both	160	72.0	7.31	4.35	0.58	25.6	82.3	8.67	36.0
	Crumbles		160	71.3	7.71	4.64	0.65	25.7	81.2	6.00	38.4

**Significantly different at the 5% and 1% level.

STUDIED IN EXPERIMENT 2—This experiment was conducted with the same number of pens, birds and length of time as Experiment 1. The same rations were fed with only slight adjustments to effect a small reduction in protein level to 15.5% for each diet. Both rations were again fed as mash and as crumbles.

Temperature control of the laying house was initiated in this experiment in an attempt to measure the ade-

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Q: How can I be sure each pound of my feed has the same amount of vitamin D as the next pound will have?
A: Uniform distribution depends mainly upon the physical properties of the vitamin D concentrate, proper mixing methods and efficient equipment. By careful management, mixing, adequate for all practical purposes, can be readily achieved. The extremely small particle size and free-flowing characteristics of Fleischmann's FIDY Irradiated Dry Yeast help tremendously in getting good distribution.

Q: At what age of animal is vitamin D most important?
A: Lack of adequate vitamin D can be disastrous at most any age. Formerly, vitamin D deficiency was thought to occur only in young growing animals. Research has now shown that mature dairy cows need vitamin D. Difficulties from inadequate vitamin D have also been observed in older beef cattle, sheep and swine.

Q: Is there a relationship between the daily feeding of a higher level of vitamin D, 8,000 units per pound of feed or more, and the possible control of milk fever without having to feed the massive doses recommended for the short period before freshening?
A: Recent careful research provides reasons why benefits from year around feeding of higher levels of vitamin D might be expected. Older cows have previously unrecognized difficulties in absorbing and utilizing calcium. Extra vitamin D helps. The results of clinical and practical studies on the control of milk fever by fortifying regular dairy rations at higher levels are very encouraging.

Q: Does artificial drying lessen the vitamin D content of hay?
A: Figured on a dry matter basis, the vitamin D content of artificially dried hay is probably about the same as was in the green forage before drying. During field curing vitamin D tends to increase but the amount is not as great as commonly supposed. Reports on 13 samples showed an average increase of only 115 units per pound during field curing. Such an increase in vitamin D in a whole ton of hay would be worth only about ½ cent.

Q: What is the difference between brewers dried yeast and irradiated dry yeast?
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A. C. Wallis

For more complete answers to any of these questions write to Dr. G. C. Wallis, Director of Nutrition, Agricultural Department, Standard Brands Incorporated, 625 Madison Avenue, New York 22, N. Y.

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TABLE 6. Experiment 2—Summary of Data for Individual Treatments of Energy Level, Form of Feed and Temperature Variation Upon Egg Production Factors of White Leghorn Hens

Treatments†			Per cent egg prod.	Lb. feed /bird/ 4-wk. per.	Lb. feed per doz. eggs	Lb. gain in body weight	Egg weight oz./doz.	Albumen quality H.U.	Per cent mortality	Per cent litter moisture
Energy	Form	Temp.								
Low	Mash	Variable	67.9	8.20	5.18	0.36	25.4	81.6	2.67	46.4
Low	Mash	Uniform	71.2**	7.94	4.78	0.27	25.3	82.1	6.67	41.8
Low	Crumbles	Variable	73.4	8.41	4.91	0.56	25.6	81.0	8.00	46.3
Low	Crumbles	Uniform	74.1	8.14	4.71	0.50	25.4	81.2	10.67	43.0
High	Mash	Variable	78.5	7.50	4.57	0.70	25.9	82.6	12.00	38.4
High	Mash	Uniform	73.5**	7.11	4.15	0.47	25.4	82.1	5.33	33.6
High	Crumbles	Variable	79.5	7.81	4.75	0.58	25.9	80.4	9.33	42.4
High	Crumbles	Uniform	72.0*	7.61	4.53	0.71	25.5	82.0	2.67	34.3

†Four replications of 80 birds each.
*,**Significantly different at the 5% and 1% level.

quacy of both energy levels under two laying house conditions. One pen of each of the four dietary treatments was operated as in Experiment 1 which included maintaining the birds in a well insulated house, equipped with thermostatically controlled fan ventilation. The thermostats were set to operate the fans when the pen temperatures reached 50° F. During the winter months when the house temperatures were below 50 degrees, the fans were controlled by a timer which permitted fan operation one out of every 10 minutes to assure adequate air exchange. Employing this system, laying house temperatures seldom exceeded 50-55° until late in the experimental year and the minimum temperatures during the winter months fluctuated between 40 and 50°. The temperature at no time reached freezing (32°). The average temperatures obtained are shown in Figure 1.

The temperature of the other duplicate pen of each dietary treatment was maintained at both a higher range and with much less variation in daily maximums and minimums. By employing both adequate ventilation and supplemental heat when needed from electric fan heaters, it was possible to maintain an extremely uniform laying house environment in which the temperature was maintained between 55 and 60° F. This condition was maintained from the beginning of the experiment in October through April or for a period of approximately 30 weeks. During the last 10 weeks of the experiment, there was little or no difference between the two environments as the seasonal temperatures exceeded 60° F. The average weekly maximum and minimum temperatures which were maintained under these two temperature conditions are shown in Figure 1, along with the average percent egg production for these two temperature treatments.

Analysis of the composite data for this experiment, summarized in Table 4, indicates that there was no difference in egg production between energy levels. However, when the individual treatments, as shown in Table 6, are examined it will be noted that the results are similar to Experiment 1, in that the low-energy ration fed as mash failed to support egg production equal to the same ration fed as crumbles or to the high-energy ration fed in either form. This is also summarized in Table 5 where temperature variations are combined and the results summarized between forms of feed for each energy level. A highly significant improvement in egg production was obtained in feeding the low-energy ration as crumbles. Increasing the density of both rations by crumbling resulted in increased feed consumption which in the case of the high-energy ration resulted in a decrease in feed efficiency.

Uniform Temperature Improves Production and Feed Efficiency—Maintaining a uniform and fairly high laying house temperature resulted in improvement in all production factors measured, irrespective of the caloric intake of the rations. As shown in Table 5, improvement in egg production which resulted in pens where the uniform temperature was maintained was almost identical for both energy levels. Improvement was obtained with each individual temperature comparison as shown between the variable and uniform temperature data in Table 6. The summary of all

(Turn to ENERGY INTAKE, page 70)

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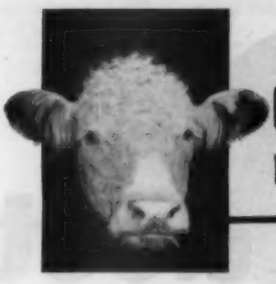

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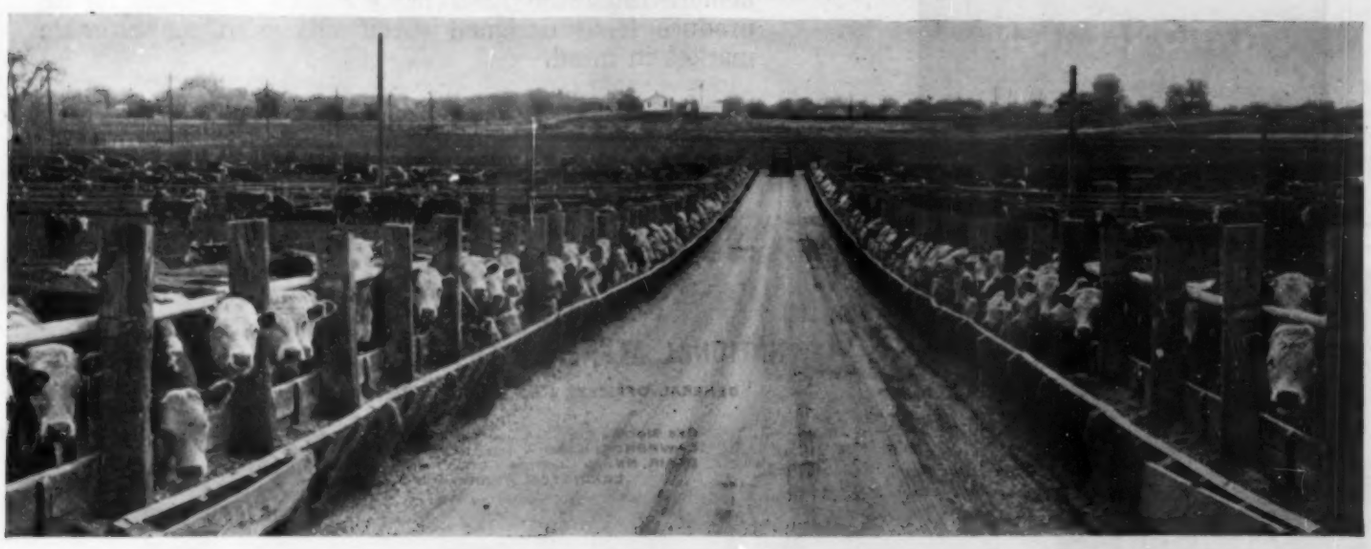

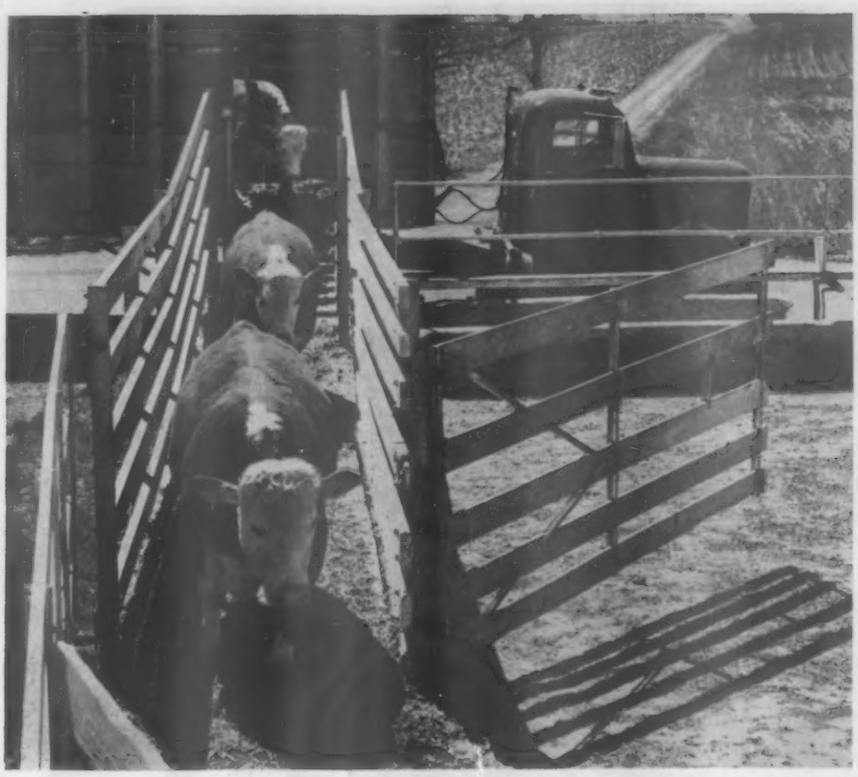

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During the last six years, it is estimated that Stilbosol accounted for an extra 722,880,000 pounds of beef to feed our meat-hungry and growing nation. This is enough to meet the beef demands of over nine million Americans for one year (based on USDA beef consumption figures of 80 lbs. per capita). Without this increase, some experts suggest that beef could have priced itself out of the picture in fighting for Mrs. Consumer's meat-buying dollar.

TODAY—AND TOMORROW

The widespread use and proved success of Stilbosol in supplements for fattening cattle has led to many other attempts to develop similar additives that would help feeders produce more beef at less cost. Many *were* developed and marketed. Yet the fact remains—*Stilbosol continues to offer more to the feeder than any other feed additive on the market.* By 1970 (ten short years from now), cattle feeders will have to supply beef to an estimated thirty to forty million more Americans. This means cattlemen will have to increase production by 22%! Stilbosol will help you meet this challenge.

Stilbosol is Elanco Products Company's trademark for diethylstilbestrol premix which is manufactured and sold under exclusive license granted by Iowa State College Research Foundation, Inc., under its U. S. Patent No. 2751303.

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DEPENDABILITY... in Quality and Service

UP OR DOWN

By Dr. Leonard W. Schruben, Agricultural Economist, Kansas State College

Price Prospects for Protein Ingredients

Prospective supplies of protein sources are an important factor in appraising the price situation. And, of course, it should be understood at the outset that any prediction of future price trends does not always turn out to be correct. This is especially true of protein supplements such as cottonseed and soybean meals. However, decisions must be made that affect the profits of feed manufacturers and price prospects should be considered in making your plans.

Since the mid-1930's, the production of high protein feeds has been increasing almost every year. This trend is shown clearly in Exhibit 1 which pictures the general kinds of proteins in which increases have been made. You will notice that production on the equivalent of soybean meal basis has gone up from about 4 million tons in 1934 to slightly over 15 million tons. This year's total supply appears to be headed for a new record high if crushing prospects are realized.

Soybean meal has provided most of the increased production. New records of production for soybeans have been set almost every season in recent years. On Nov. 1, this year's forecast of production was 560 million bushels. This compares with previous record of 580 million set in 1958. It is 4% above 1959 and more than twice the average.

From the standpoint of over-all supply-demand balance the quantity of high protein feeds available per animal unit is also an important consideration. In this category of comparison a new record also is being set for the feeding season beginning Oct. 1. Trends are shown in Exhibit 2. Based on preliminary estimates and indications early in the season the total of 287 lb. of high-protein feeds were available per animal unit. This compares with the average 1954-1958 of only 257 lb. per animal unit.

An animal unit is near the equivalent of one dairy cow as far as feed used is concerned. This new record supply per unit should indicate that there will not be a great deal of pressure pushing prices up during the season.

Most of the high protein sources of livestock feed do not show consistent seasonal changes. These are the ups and downs associated with a particular time of year. Prices may fluctuate widely during the year but in some years the high will occur early and other years the high will occur later in the season. Thus, they tend to offset each other as far as over-all average variation is computed. So you need to take a look at how the situation each year shapes up.

Prices are expected to average a little bit below those of a year ago. In view of the apparent abundance of supplies of high protein sources for the current feeding season, prices are not likely to be so strong during the first half of the feeding year. This would indicate you need not be in a hurry to contract ahead for your requirements for the season.

You should remember though that the picture can change very rapidly. So keep your eye on the market and get set to contract for a part of your supply on any good break in price.

Remember, in buying protein supplements, to compare prices . . . and buy the one that gives you the most for your money.

One rule of thumb in deciding which to purchase is to compare prices on the basis of the cost per ton of actual protein. You do this by taking a look at the analysis tag. Using the percentage analysis find out how many pounds of protein there are per ton. Then, if you divide this into the price per ton it will give you the price per pound. There is, of course, some non-protein in the supplement and the general rule is to allow about the price of corn as the value of this non-protein.

EXHIBIT 1

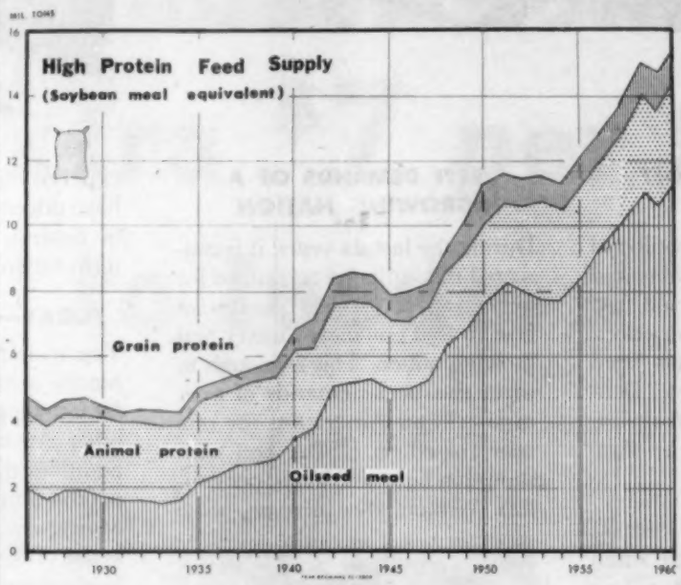
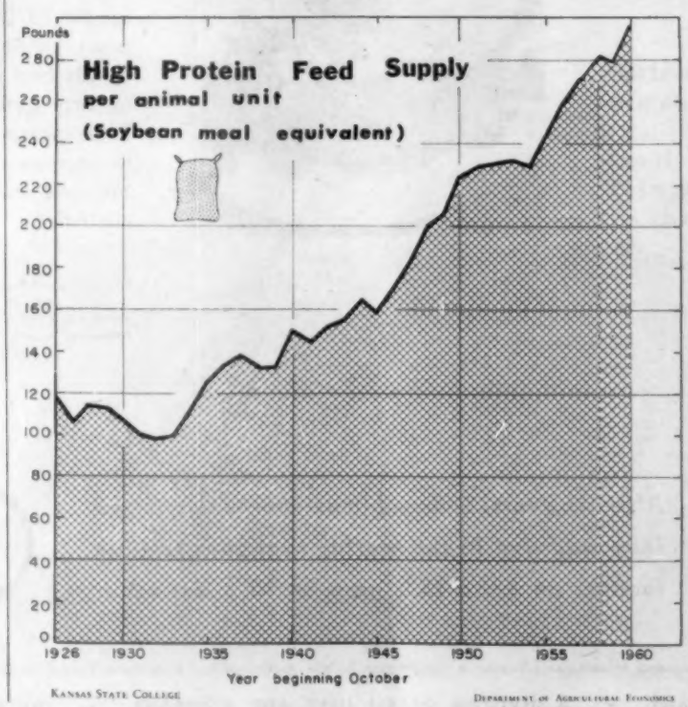


EXHIBIT 2



ADM Ad Manager

MINNEAPOLIS—Appointment of Robert D. Coonley as advertising manager for Archer-Daniels-Midland Co. was announced by Victor P. Buell, ADM vice president and director of marketing.

For the past three and a half years Mr. Coonley has been product advertising manager for ADM's chemicals and bakery flours.

In his new position, he will direct the company's national advertising in such fields as chemicals, resins, flour and other foods, plastics, industrial cereals and linseed and soybean oils and meals.

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To better satisfy the needs of our customers, the Thompson-Hayward Feed Chemical Division maintains a skilled and highly-qualified staff of feed nutritionists. Constantly in touch with the numerous research programs being conducted by colleges and universities across the nation, this nutritional staff stands ready to supply any necessary information or consultation concerning state feed laws, disease control, specialized feed formulation. It is the sole purpose of this staff to help you manufacture better feeds through more effective use of feed additives. You are invited to take advantage of this service.

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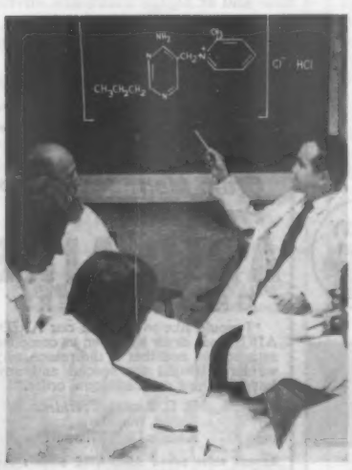

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Carefully selected from a massive screening program involving thousands of compounds, AMPROL combines a highly desirable balance of efficacy and safety. It shows promise of being a truly effective coccidiostat for use in broiler feeds. This latest addition to the Merck family of coccidiostats is really new and has undergone intensive study and testing, using the most advanced methods. It is the first coccidiostat evaluated against seven species of chicken coccidia.

UNIQUE ANTICOCCIDIAL ACTION

The chemical structure of AMPROL differs completely from that of any other coccidiostat—it is similar to that of thiamine. At recommended use levels, AMPROL appears to interfere with the thiamine metabolism of the coccidia, but does not affect the normal thiamine metabolism of the chicken. This mode of action is entirely different from that of any other coccidiostat in the industry's history.

SIGNIFICANT COMMERCIAL ADVANTAGES

The value of AMPROL can be measured by its efficacy and its favorable margin of safety . . . plus the fact that it permits attractive weight gains and feed conversions. What's more important, tests to date have not shown any significant ability of coccidia to develop resistance to this compound—an indication of a most promising role for AMPROL—in the management of coccidiosis—for years to come.

EFFICACY

AMPROL exhibits important activity against the most significant coccidia—especially *Eimeria tenella* and *E. necatrix*. Carefully checked against *44 strains of seven coccidial species*, AMPROL has demonstrated a favorable pattern of performance under a variety of conditions.

And in laboratory comparisons with *mixed* infections of cecal and intestinal coccidiosis (*E. tenella, E. necatrix, E. acervulina* and *E. maxima*), AMPROL *gave more protection than other coccidiostats.*

PRODUCTION PERFORMANCE

AMPROL has permitted excellent growth and feed efficiency. Results of a year of experiments under practical, commercial-type conditions have substantiated the laboratory findings.

Compared with controls, broilers on AMPROL showed higher final weights, with favorable feed conversions.

CONSISTENT PERFORMANCE

In the tests, birds were exposed to four consecutive generations of ten virulent strains of *E. tenella*. This "killer" coccidial species did not develop significant resistance to AMPROL. Based on these and subsequent tests, it is anticipated that AMPROL will give consistently good protection under most field conditions.

SAFETY

AMPROL is well tolerated up to four times its suggested use level of 0.0125%. Side effects noted above a 0.05% level are specifically related to thiamine-depletion, and are quickly reversible by giving thiamine. This simple corrective procedure is unique with AMPROL.

Layer and breeder feeding trials indicate that recommended use levels of AMPROL will not affect egg quality, egg production or hatchability.

No toxicity is observed when feeds containing AMPROL are fed to cattle, sheep, swine and dogs.

USE LEVELS

The recommended use level for most field conditions is 0.0125%; where adverse conditions and less sensitive strains of coccidia prevail, the 0.025% level should be employed.

FURTHER INFORMATION

Reference data on the use of AMPROL in broiler feeds are available in a technical service bulletin.

For more details, or to place your initial order, contact your Merck representative or write to Agricultural Products, Merck Chemical Division, Merck & Co., Inc., Rahway, N. J.

Amprol® (amprolium)

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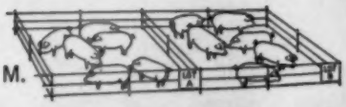
Putting Research To Work

BY SPENCER H. MORRISON, PH.D., D. V. M.



The Influence of Dietary Protein Level on the Response of S.C. White Leghorns to Supplementary Ascorbic Acid

● P. A. Thornton, Colorado Experiment Station; Poultry Science, Vol. 39, No. 5, pp. 1072-1076, September, 1960.

ABSTRACT AND COMMENT

Since there continues to be so much speculation and conflicting reports concerning the use of supplementary vitamin C in laying hen rations, it is probably the best policy to continue to review pertinent papers concerning the problem until some clear-cut effect is noted, or else until it is conclusively proven to be of no value.

As most of us already know, the Colorado group has reported that egg shell thickness was consistently improved under conditions of heat stress when this vitamin was added to the diet, using a 15% protein corn-soybean oil meal type of ration (1958). Other workers to a large degree have been unable to confirm the beneficial effects of such additions to the laying hen diet (Pepper et al., 1960; Marion, 1959; Marr, 1960).

Since it was possible that protein could influence the requirement for ascorbic acid it was thought necessary to evaluate this variable. Three experiments were conducted using either 13 or 17% protein rations to which 20 mg. of vitamin C per pound was added to half the groups. The basal rations were similar in composition, with appropriate protein adjustments, and were of the milo-corn-soybean oil meal type with 3% fish meal, 2½% brewers dried yeast, and 2½% dehydrated alfalfa meal, plus minerals and vitamins.

The first study was conducted with 100 hens (SCWL) June 15 to July 20; the second, with 36 hens in a constant temperature room at 74° F. at the start and increased gradually to 85° F., after which eggs were collected for four weeks; and the third, with 80 hens from March 15 to Aug. 15.

Egg weight and shell thickness determinations were made in all trials. The results showed that in the first experiment there was little or no response to vitamin C at the 13% protein level, while a marked detrimental response was observed with the supplementary vitamin at the 17% protein level.

This failure to respond to supplemental ascorbic acid in the first trial on 13% protein level was attributed by the author to the time of the year in which the vitamin was supplemented. It was stated that "the experiment was initiated during the month of June after the onset of daily high temperatures, and it is possible that the birds could not accommodate to the vitamin supplementation.

"The previous work at this station would indicate that this was not the case, however."

The significantly detrimental response in the 17% protein fed group was attributed to the fact that the particular experimental subjects had a lower ability to produce a given shell thickness, but the same possibility could exist for the 13% fed birds.

In the second experiment, precautionary measures were carried out to eliminate the inherent differences by determining the shell thickness and shell percent prior to placing the hens on the experimental regimes. Again, the results of the first experiment appeared to be confirmed with respect to supplemental vitamin C, even though reduction in egg weights occurred in both groups and especially in the 13% protein ones.

However, in this experiment the addition of ascorbic acid to the 13% protein fed birds appeared to lessen somewhat the decrease in egg weight as well as to improve both shell thickness and percent shell. In contrast, the same level of vitamin C at the 17% protein level did not improve the results. In fact, a slightly greater decrease for both shell thickness and percent shell was noted.

In the final experiment, which was conducted over a longer period of time and at higher maximum environmental temperatures, very similar results were observed to those secured in trials 1 and 2.

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parent that some beneficial effect was obtained from supplementary ascorbic acid on the 13% protein levels with regard to maintenance of shell quality during periods of heat stress. In contrast, the results with 17% protein level showed that addition of this vitamin actually resulted in detrimental effects in shell quality.

The author did not have a real explanation for this observed experimental difference, but did suggest the possibility of the amount of phenylalanine or tyrosine or the total of these two amino acids present in the two diets. Since it has been established previously that ascorbic acid is concerned with tyrosine, and also since the chicken forms tyrosine from phenylalanine, it would appear possibly that the response from ascorbic acid in the two different protein diets could have a relation to levels of these amino acids present.

By calculation (Williams 1955), the phenylalanine in the 17 and 13% diets was found to be 4.53 and 4.54% of the total protein, respectively. In the case of tyrosine, the similar values were 3.47 and 3.77%, respectively.

It was not known whether this slight apparent tyrosine deficiency was important in the response obtained. But it is pointed out that the previously used 15% protein diet which also demonstrated a response from supplementary vitamin C also calculated higher in tyrosine than the currently used 17% protein diet, namely 4.47% tyrosine of the total protein.

The relationship of amino acids, particularly the two above, is under current investigation at the Colorado station with respect to vitamin C response and shell quality factors.

It is entirely possible that practical feed men have been somewhat hasty in jumping onto the vitamin C bandwagon since many of the commercially used rations would calculate lower, or as low, in tyrosine and phenylalanine than those levels above which gave no response to supplementary vitamin C. Also, commercial practice usually demands the marketing of laying rations in the range of 16 to 17% protein in most cases, even though favorable results have been reported at lower protein levels when careful attention has been paid to vitamin, energy and especially amino acid relationships.

Since commercial formulation may change rather quickly in ingredient composition and/or percentages of these ingredients in the formula, it would seem quite difficult to evaluate the actual response from ascorbic acid by field trials unless careful steps were taken to establish true experimental conditions. Except in real problem flocks or unusual heat stress areas, it would seem best policy, for now, to adopt a "wait and see" attitude as far as most commercial laying feeds are concerned.

◆

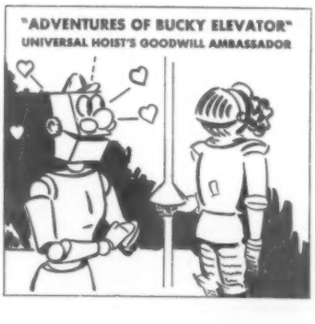
Timely and Worth Noting

During this holiday season when turkeys become extremely popular as the feature attraction on the dining tables of America, it is particularly appropriate to note a recent article in the September issue of Poultry Science (Vol. 39, No. 5, pp. 1101-1105) by workers of ARS at Beltsville, Md. (Harkin et al.) on the effect of yield of edible turkey meat from birds fed differing rations.

Although the study was quite small (108 Beltsville Small White), it does show that while seven different rations were used, which differed considerably in formulation, neither the source of protein (animal and vegetable combined, or vegetable alone) nor the form of the vitamins (dry A and D or as fish oil) made any appreciable difference in the amounts of light meat, dark meat, fat, skin, or bone from the cooked turkeys or in the cooking losses.

On the other hand, the percentage yield of cooked light meat was slightly lower and the separable fat was somewhat higher from turkeys fed 8% lard, but the percentage of cooked edible turkey, including lean, fat, and skin was comparable to that for turkeys fed the other rations. The heaviest birds were produced on 8% lard, dry A and D, and vegetable protein as the main source of protein.

For someone who desires to know how much he gets out of turkey, I found the following figures rather interesting: With these light birds ranging on the average from 7.4 to 9.0 lb. liveweight, we can expect to obtain 35½ to 37% of the liveweight as the edible portion including meat, fat and skin. Also, in general, after roasting at 325° F. or braising at 450° F., about 28% was light meat, 18% dark meat, 9% skin and fat, and 18% bones, when the percentages were based on the weight of ready-to-cook birds.



Average Construction Costs Are Reported For New Elevators

SPOKANE, WASH. — Country grain storage elevators built this year in the Pacific Northwest cost an average 74¢ bu. of capacity, according to a survey completed by the Pacific Northwest Grain Dealers Assn.

"During our negotiations last winter with the department of agriculture for a new Uniform Grain Storage Agreement — which wound up with USDA imposing new lower storage rates—various cost figures for new storage were bandied about," said Merrill D. Sather, executive secretary of the association, in announcing the results of the survey.

"Storage construction costs really are variable," Mr. Sather said. "Actually, in our survey the costs ranged from 35¢ bu. of capacity to 96¢ bu.

"The 35¢ was for a single bin steel tank annex with none of the conventional elevator equipment except an underground conveyor to empty it. For 96¢ bu. capacity, the grain dealer got a complete facility: Concrete bins, full elevator and conveyor equipment and an electric manlift."

The survey was conducted among firms which this year built 11 new storage facilities to replace old ones or to add to capacity. The elevators (and their capacities) were: United Grain Growers, Harrington (375,000 bu.); Edwall Grain Growers, Edens (250,000 bu.); Klickitat Valley Grain Growers, Inc., Centerville (340,000 bu.); Rockford Grain Growers, Inc., Worley, Idaho (158,000 bu.); Pullman Grain Growers, Inc., Ewartsville (260,000 bu.); Touchet Valley Grain Growers, Inc., Bolles (280,000 bu.).

Colfax Grain Growers, Inc., Union Center (262,000 bu. concrete elevator and 166,000 bu. flat); Deadman Elevator Co., Mayview, Garfield County (150,000 bu.); Odessa Union Warehouse Co., Ephrata (147,000 bu.), and Lewiston Grain Growers, Kendrick, Idaho (300,000 bu.) and Juliaetta, Idaho (216,000 bu.).

An earlier survey among storage construction contractors showed that they also considered the costs highly variable—their estimates ranged from 40¢ bu. for large capacity tanks or flat warehouses to $1 bu. of capacity for a fully equipped elevator.

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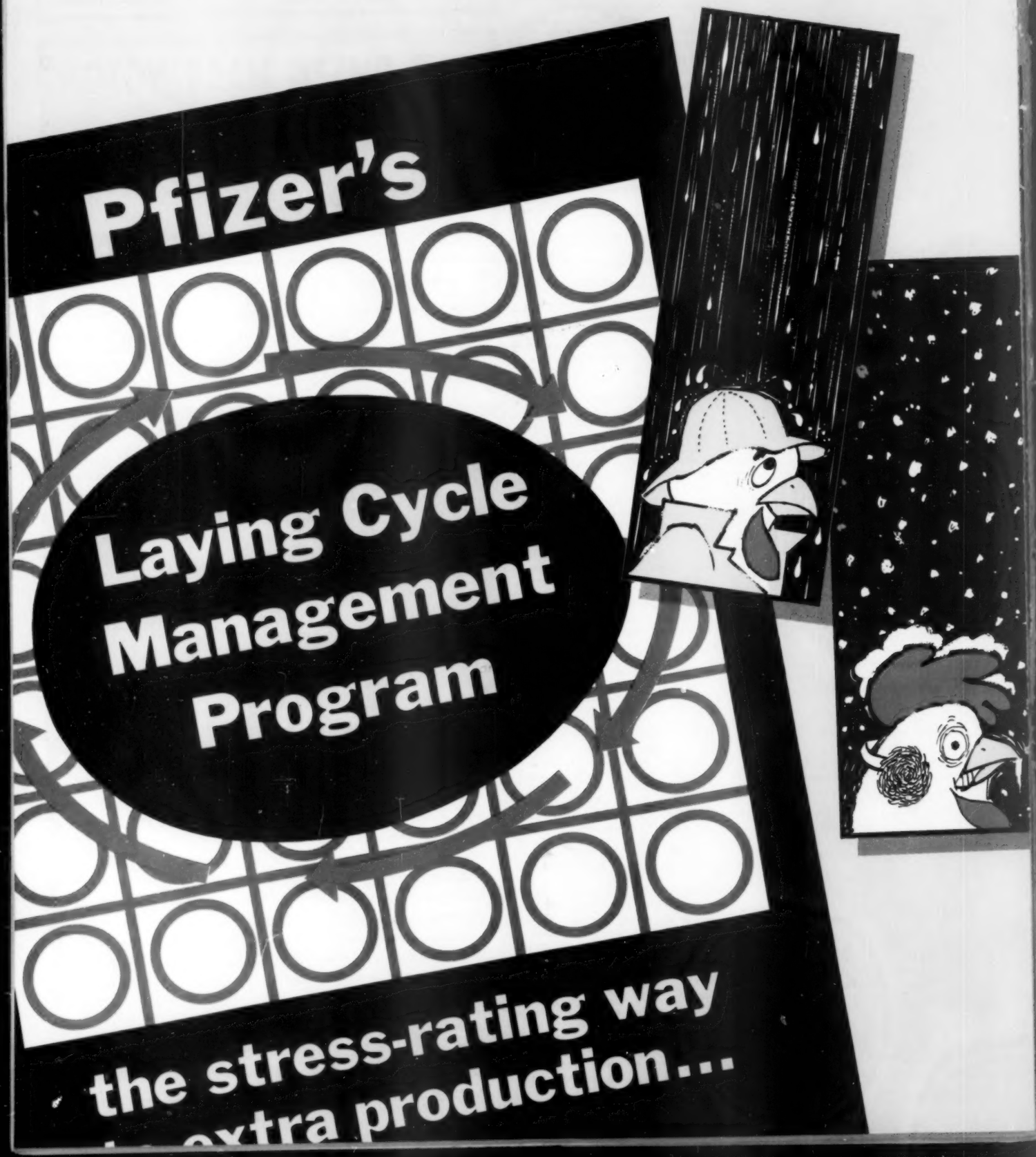

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As your flock-owner customers know, top egg production doesn't "just happen." Particularly when winter stresses, such as sudden temperature or humidity changes, do their best to knock birds off their stride.

That's where the new Pfizer Laying Cycle Program can help your customers . . . and help you sell your laying feed programs, too. It uses the stress-rating way to get extra production by: 1. Pointing up the problems that reduce egg production; and, 2. Offering a program with your Extra-Production Laying Feeds to help fight disease setbacks.*

The new program features the important selling fact that every flock always faces some stress . . . no matter how good the management. That's why birds need the help of your Extra-Production Laying Feeds throughout the laying period . . . a potent way to fight the setbacks* of stress.

Under the laying cycle program, your Extra-Production Laying Feeds with low levels of Terramycin are fed continuously throughout the winter laying period. These feeds have shown their ability to increase egg production and feed efficiency.

At times of extra heavy stresses, your laying feeds with high levels of Terramycin give potent help in clearing up many conditions that slow down production—fight bacterial infections and certain other poultry diseases like CRD which can flare up and get a foothold in disease-weakened birds.

This winter, the Laying Cycle Management Program gives you and your salesmen a timely opportunity to talk feeding and management programs for the entire production period. The 8-page booklet has already been sent to over 400,000 poultrymen, and advertised in the major poultry books and national magazines.

Now, it's time for you to *stress*-key your selling to tie in for more sales. The program is versatile . . . can be adapted to every part of the country, to any time of the year . . . for any type of layer and for every age of bird. And right now, many poultrymen who have decided to hold their old hens over, will be especially interested in the program as a way to keep these old hens laying heavily as long as possible.

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71. **The Grain Bank Has Come of Age**—Glenn R. Siler, Ralston Purina Co. **20c**
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Critical Evaluation of . . .

Methods for Measuring Protein Quality

By Dr. Dewey Johnson, Jr.
Lime Crest Research Laboratory

The biological value of a protein depends primarily upon its amino acid composition[22]. The utilization of a protein is influenced by factors such as its level in the diet, the energy content of the diet and the species of animal to which it is fed. The biological value of a protein decreases as the level of protein in the diet is increased.

Most assay techniques demand that a region of linear response be employed for a valid assay result. This means that extremely low protein levels must be fed. At low levels of protein intake interactions of amino acids may or may not have an adverse effect on the retention of nitrogen by the test animal.[12] The level of energy in the diet can affect the amount of nitrogen retained by the animal[3].

Different species have different amino acid requirements; the rat has been a very popular test animal for the evaluation of protein quality, but the rat's requirement for arginine is only about one sixth that of the young chicken's requirement[5].

Individual Patterns

Each species requires its own pattern of amino acids for the most efficient use of the essential amino acids. For example, a particular pattern of amino acids is required for maintenance, another pattern of amino acids is required for growth, and still another pattern for building serum proteins.

If a protein cannnot satisfy an animal's total requirement of amino acids, the relative amounts of amino acids that are channeled to each of the protein building processes are changed. Thus, when isonitrogenous quantities of protein are evaluated, some proteins provide enough amino acids for the animal to maintain itself and to grow while others provide an amount of amino acids to satisfy only the maintenance requirements.

There is no clear cut line of demarcation between these functions. A gradual shift of utilization of amino acid occurs as protein quality is changed, the poor protein is not evaluated by the same requirements as the good protein.

The amino acids that are most likely to be deficient in the food supply of the world are lysine and tryptophan and the sulfur containing amino acids, methionine and cystine. One or more of these amino acids generally limit the utilization of a protein.

BIOLOGICAL METHODS—The oldest, simplest, and most popular method of protein evaluation has been to feed the protein as the sole source of nitrogen in the diet. The protein efficiency ratio (PER) can be calculated from the gain of weight that is made on a given amount of protein consumed. In most instances gain in weight is adequate to separate proteins of different biological value, as is shown in Table 1[14]. It is important to feed the protein to be tested at a low level because, as the level of protein in the diet is increased, differences tend to be smaller.

TABLE 1. Gain on Seven Selected Fish Meal Samples Expressed as a Per Cent of Egg White Response at Three Different Levels of Dietary Protein[14]

Samples	Level of crude protein 10%	15%	30%
Fish meal B	104	115	110
Fish meal J	84	99	90
Fish meal M	79	89	89
Fish meal L	74	84	98
Fish meal K	73	84	98
Fish meal G	71	90	99
Fish meal H	63	81	76
Average	78	91	94

EDITOR'S NOTE: *A series of papers presented at the 1960 annual meeting of the Animal Nutrition Research Council in Washington, D.C., are being published in Feedstuffs, beginning with this article by Dr. Johnson of Lime Crest Research Laboratory, Limestone Products Corporation of America, Newton, N.J. Other ANRC papers of this series will concern vitamin reference standards, a report on factors influencing nutritional values of trace elements found in feedstuffs and other subjects.*

Some of the problems concerned with evaluating single proteins are: (a) Weight gains may not be of equal composition, and a high caloric intake coupled with a poor quality protein produces a fat carcass; (b) if food intake is quite variable, the results may not be comparable[3], and in a paired feeding experiment the caloric restriction may be too great on the animals receiving the good protein, and protein catabolism may alter the result; and (3) by feeding a single protein no information is obtained on the supplementary value of that protein.

Measurement Modification

H. H. Mitchell[16] modified the method of measuring the biological value of a protein originally developed by Thomas. Both Mitchell and Thomas expressed the biological value as the percentage of absorbed nitrogen which is retained by the animal. Therefore, the biological value of a protein depends on the amino acids that are absorbed and utilized by the animal for protein formation.

Mitchell and his students have followed a very strict regime of standardization over the years and have obtained excellent results with his method. Mitchell's formula for calculating the biological value of a protein is

$$BV = 100 \times \frac{NB + F_m + U_e}{NI - (F - F_m)}$$

in which, NB represents nitrogen balance; F_m represents metabolic fecal nitrogen; U_e represents endogenous urinary nitrogen; NI represents nitrogen intake and F represents fecal nitrogen. Mitchell[19] found the biological value to decrease as protein

TABLE 2. The Biological Value of Proteins at Different Levels of Intake[19]

Protein	Level of crude protein 5%	10%
Milk protein	93.4	84.7
Casein	70.8	...
Corn	72.0	59.6
Oat	78.6	64.9
Rice	86.1	...
Potato N	68.5	...
Yeast	85.5	...

TABLE 3. The Influence of Depletion of Protein Reserves on the Nitrogen Balance Index[4]

	K	
	Casein	Egg
Normal dog	0.81	0.96
Depleted dog	0.92	1.20
Depleted dog	0.93	1.27

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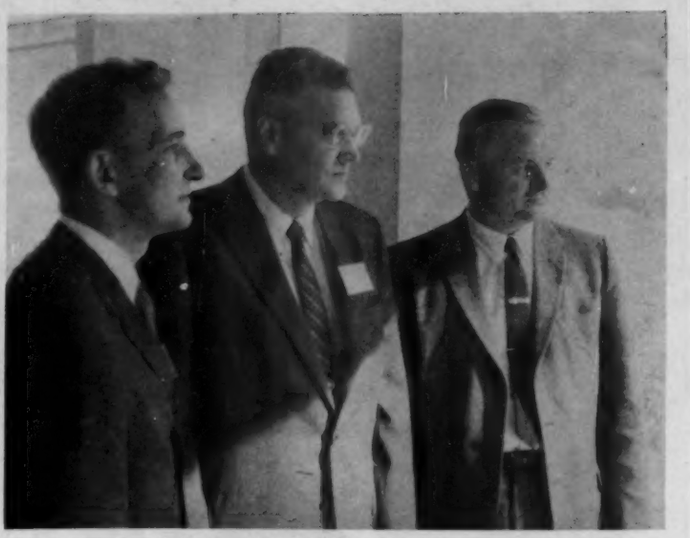

ANRC OFFICERS—New and reelected officers of the Animal Nutrition and Research Council are pictured here at the Shoreham Hotel in Washington, D.C., during the group's recent annual meeting. They are, left to right: Philip H. Derse, Wisconsin Alumni Research Foundation, reelected secretary-treasurer; Dr. Stanley R. Ames, Distillation Products Industries, Rochester, N.Y., chairman, and Dr. D. E. Becker, University of Illinois, vice chairman (Feedstuffs, Oct. 15).

is increased in the experimental diet (see Table 2).

The metabolic fecal nitrogen and the endogenous urinary nitrogen are difficult to estimate because to obtain these estimates it is necessary to feed a nitrogen-free diet (or a diet containing a small amount of egg protein to improve palatability) at another time during the experimental period. The large number of collections and nitrogen determinations make this a very tedious method. Loss of nitrogen, loss of a collection, or contamination of a collection with feed can cause considerable error in the determination of the biological value.

Nitrogen Balance Index

Allison and Anderson[8] proposed the nitrogen balance index method of protein evaluation. It involved feeding several levels of nitrogen below the level of nitrogen equilibrium. Their nitrogen balance index is calculated by

$$NB = K(\text{absorbed N}) - \text{Total nitrogen excretion at zero absorbed nitrogen}$$

where NB represents nitrogen balance and K represents the nitrogen balance index.

The slope of this function, which is linear from zero protein intake to low positive balance, is an indication of protein quality.

The nitrogen balance index was shown to be influenced by the nutritional state of the test animal as shown in Table 3[8]. This method gives extremely high values for good proteins when the test animal is depleted of protein reserves. The proteins maintain their relative position to each other if the test animals have similar protein reserves.

Other Methods

There are other methods that indicate the biological value of a protein by utilizing the change of concentration of liver nitrogen[13] and liver enzymes[16] at different levels of nitrogen intake.

The body nitrogen to body water ratio method of Bender and Miller[7] gives promise as a simple method of protein evaluation. Biological values have also been obtained by employing lower forms of life as the test animals. Among these is the bacteriological method of Halevy and Grossowicz[10].

CHEMICAL SCORE—After a large amount of data was collected on the biological value of proteins, Mitchell and Block[20] proposed that the biological value of proteins could be correlated with the amino acid compositions of those proteins. This method was given the name chemical score.

To calculate the chemical score one first takes 100 times the ratio of the percentage of each essential amino acid in the test protein to the per-

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centage of the same amino acid in the protein taken as the standard. The chemical score of the test protein is the percentage of the amino acid that is lowest in concentration relative to the standard protein. This implies that the protein of the standard must not have an excess concentration of any essential amino acid nor any amino acid deficiencies.

Arginine was not considered in this method of calculation. Tyrosine and phenylalanine as well as methionine and cystine were considered together.

This method underestimates proteins of low biological value. Oser[23] found that by taking the geometric mean of the percentages of concentration of amino acids in the test protein to the concentration of amino acids in the standard protein, an improvement could be made in the chemical score method. If the relative concentration of any amino acid in the test protein to the concentration of that amino acid in the standard protein exceeded 100%, the percentage was reduced to 100%. This step avoided excess concentrations of amino acids from overweighting the geometric mean. Oser omitted the contribution of tyrosine from his calculations.

In Table 4, the growing chicken's requirements[7] of the amino acid are listed. Also, the contributions of amino acids from corn and soybean meal based on the analysis of Block and Weiss[8] are computed.

These computations indicate that with this simple combination of ingredients, all the amino acid requirements of the chicken would be satisfied with the exception of the sulfur containing amino acids. This fact can be tested experimentally to confirm or disprove the paper analysis.

Experience indicates that under some conditions no response is obtained from methionine supplementation. If no response is obtained, one can only conclude that the pattern of amino acids chosen for the standard is faulty or that the values used for the total concentration of the sulfur containing amino acids in the feedstuffs were too low. It is a well known fact that the sulfur containing amino acids are easily destroyed during hydrolysis. It is also difficult to select the proper value from tables to calculate the amino acid composition of a protein.

An example is shown in Table 5 of values taken from seven tables of amino acid composition. The high and low values in each column are underlined. The problem is: Which amino acid content represents the ingredient? If proteins actually vary as indicated by Table 5, cooperation of geneticists, agronomists and nutritionists should improve the world supply of tryptophan, lysine and sulfur containing amino acids. There is evi-

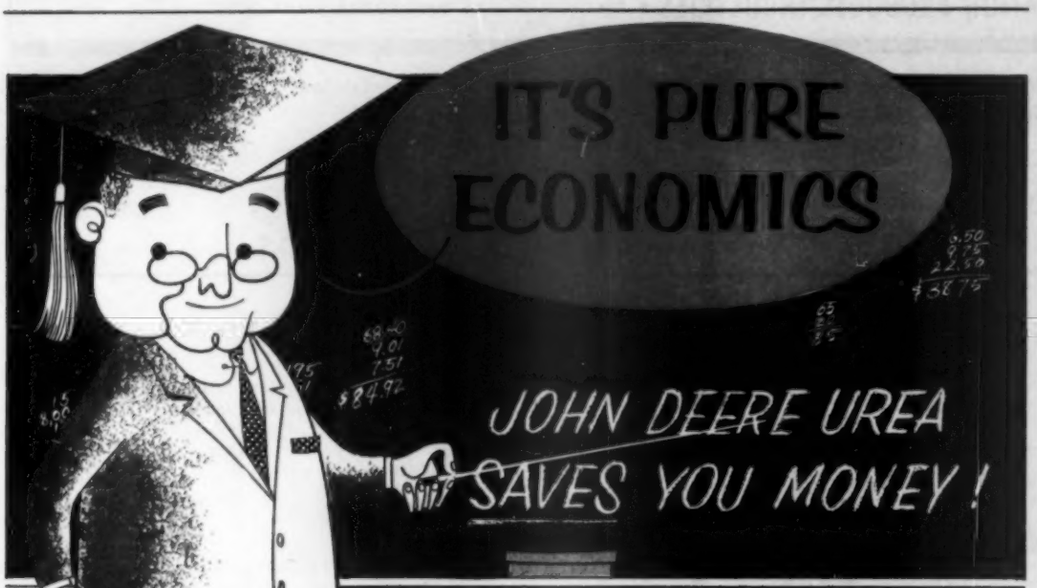
TABLE 4. A Paper Assay of a Simple Corn-Soybean Diet

	NRC Requirement*	60% Corn†	35% Soybean‡	Total¶
Histidine	0.15	0.12	0.38	0.50
Lysine	0.9	0.14	1.02	1.16
Tyrosine + phenylalanine	1.6	0.47	1.23	1.70
Tryptophan ..	0.2	0.04	0.18	0.22
Cystine + Methionine.	0.8	0.18	0.35	0.53
Threonine	0.6	0.21	0.60	0.81
Leucine	1.4	0.66	1.17	1.83
Isoleucine	0.6	0.21	0.89	1.10
Valine	0.8	0.27	0.80	1.07

*Reference 7.
†Assume 8.6% protein and the amino acid analysis of reference 8.
‡Assume 44% protein and the amino acid analysis of reference 8.
¶Total of 20.56% protein.

TABLE 5. Amino Acid Composition (g/16g N)

Corn			Soybean			Reference
Lys.	Met.	Try.	Lys.	Met.	Try.	
2.2	2.0	1.11	7.1	1.5	1.29	5
3.3	1.6	0.89	6.2	1.4	1.29	7
2.7	1.8	0.7	6.6	1.1	1.2	9
2.2	2.3	0.78	6.0	1.4	1.18	9
3.1	2.2	0.9	5.3	1.6	1.1	12
2.1	2.1	0.81	5.8	1.8	1.16	15
2.4	2.3	0.73	5.9	1.7	1.21	23
—	—	—	—	—	—	—
134	144	157	134	164	117	Range (% of low)



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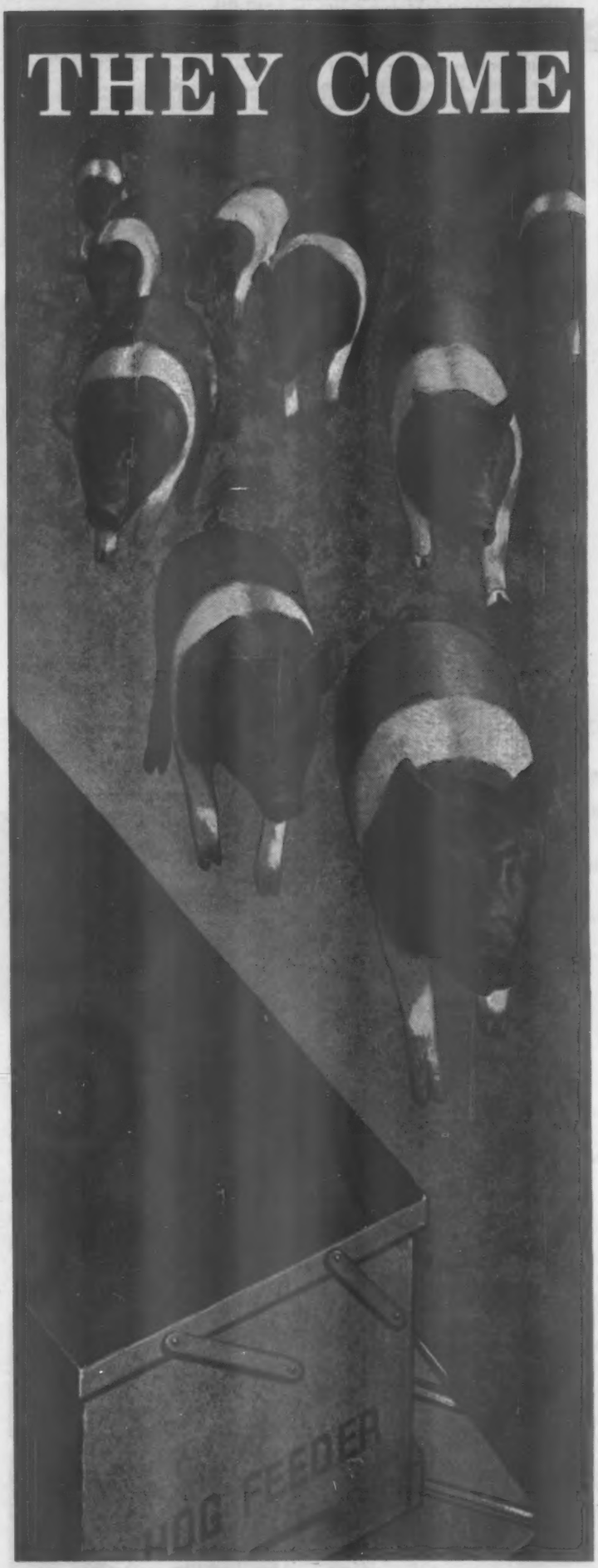

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dence that fertilization will increase the concentration of amino acids in alfalfa".

SUMMARY—The methods of evaluating proteins can be divided into two classes: Biological and chemical.

The biological methods evaluate the protein by some method of measuring nitrogen retention in the test animal. There is no indication of which amino acid(s) is deficient.

The chemical methods are based on the comparison of amino acid analysis of the protein and a pattern of amino acids suitable for the species in question. This method gives an indication of the limiting amino acid of the test protein. The use of the chemical method of evaluating proteins is limited by the precision of the analysis of amino acids and the pattern of amino acids used for the reference standard.

♥ ♥

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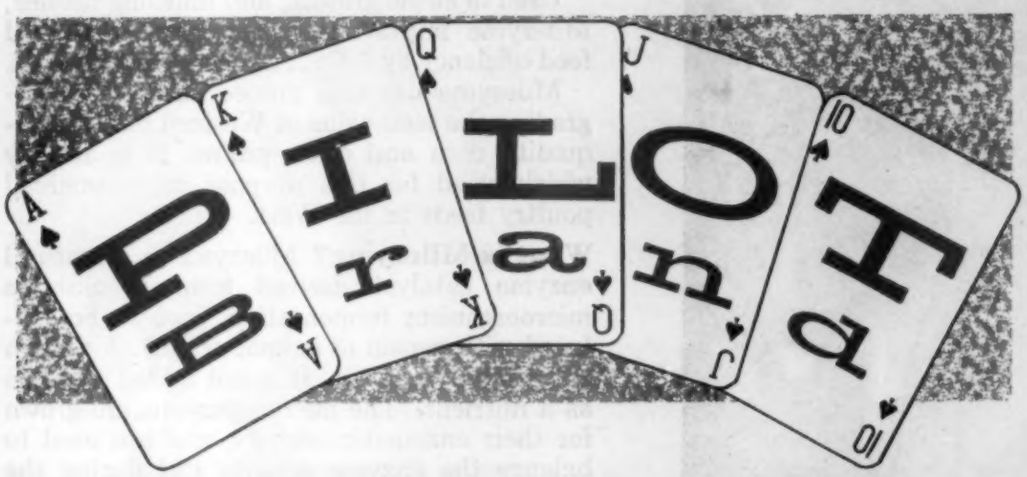

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Commercial Solvents Declares Dividend

NEW YORK—The board of directors of Commercial Solvents Corp. has declared a regular fourth quarter dividend of 15¢ per share of common stock. In addition, the board voted a 2% stock dividend on the company's 2,796,250 issued shares of common stock.

The two dividends will be paid on Dec. 30, to stockholders of record at the close of business on Dec. 2.

The fourth quarter declaration brings the total cash dividend for 1960 to 50¢ per share, a 100% increase over cash dividends paid in 1959.

The previous cash payment on September 30 was 15¢ per share. For the fourth quarter of last year, the company paid a regular dividend of 5¢ per share and an extra dividend of 5¢ per share.

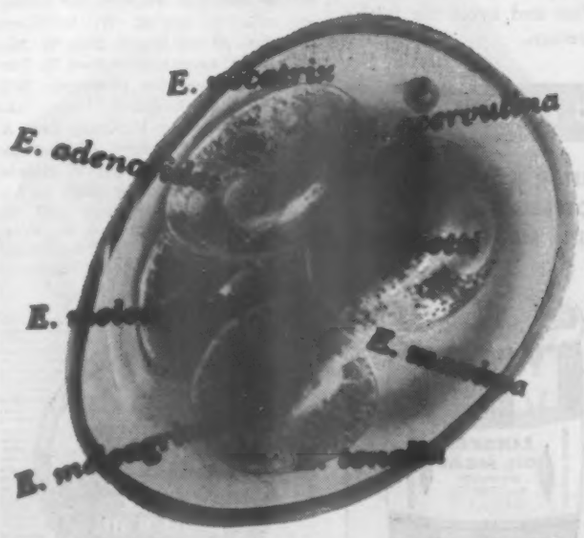
Commercial Solvents Corp. makes and markets a wide range of industrial chemicals, including agricultural chemicals and animal nutrition products.

PROTEIN BLOCKS
Also
MINERAL BLOCKS
WRITE FOR PRICES
FARMERS FRIEND MINERAL CO.
NAPOLEON, OHIO

food nutrients
BLOMFIELD-
SWANSON
MINNEAPOLIS

When other drugs fail against coxy breaks...

SQ



● TRADEMARK OF MERCK & CO., INC., FOR SULFAQUINOXALINE. © MERCK & CO., INC.

THE ONLY COCCIDIOSTAT EFFECTIVE AGAINST ALL IMPORTANT COCCIDIAL SPECIES

No other drug can match the effectiveness, safety, and economy of S.Q. in treating outbreaks of coccidiosis in chicks, poults, pullets—*and* birds in production. Unlike other drugs, S.Q. works best during the all-important 72- to 96-hour period after infection, when coccidia are most vulnerable to medication.

S.Q.—used promptly at therapeutic levels—will check coxy outbreaks . . . cut losses by holding mortality and stunting to a minimum . . . keep flocks on feed until the outbreak is under control.
Merck Chemical Division, Merck & Co., Inc., Rahway, N. J.

S.Q.® *with* THE MERCK MARGIN OF SURETY

THE BIG DIFFERENCE IS

Amburgo

PERSONAL TOUCH

The big difference between profit and loss for the formula feed manufacturer is not always the lowest cost of feed additives. But it is, definitely, the effectiveness or performance of your formulas. Best performance is gained by using highest quality additives which supply safety margins so that when used at proper levels, will achieve your specific purpose.

Your Amburgo field representative keeps up to date on all formula feed developments. He is backed by knowledge and experience which translates the newest data from college and industrial research in the feed formulation field into practical, profitable solutions to your day-in, day-out problems.

Look to Amburgo for the Personal Touch Service that makes the big difference between productivity and inactivity.

The AMBURGO CO., Inc.

EXECUTIVE OFFICES
1315-17 WALNUT ST.
PHILADELPHIA 3, PA.

1636 N. CALAVERAS ST.
FRESNO, CALIFORNIA
PLANT: HOPE, INDIANA

Central Soya Holds Annual Meeting For Shareholders

FORT WAYNE, IND.—About 400 people from nine states attended the company's annual shareholders meeting on Nov. 16 in Fort Wayne, Ind., and heard reports from Harold W. McMillen, Central Soya board chairman, and Dale W. McMillen, Jr., president.

Reviewing the financial report for the past year, Chairman McMillen noted that net earnings for the year amounted to $1.50 per share, compared to $2.46 in the previous year (based on the same number of shares). He attributed the decline to adverse agricultural economic conditions.

Mr. McMillen also outlined the company's new corporate identification system and mark, which he said will help Central Soya to "present a forceful, meaningful and clear picture of our company, and its operating divisions, to our many interested publics."

He described the new corporate mark as symbolic of growth . . . "in size, stature and service to agriculture and mankind."

President Dale McMillen reported on production, distribution and research activities at the annual meeting.

He cited several major expansion projects undertaken by the company last year as "concrete evidence of our belief that brief declines such as that which occurred last year in our agricultural economy are only of temporary significance."

"The major portions of our capital expenditures for last year went toward the new isolated protein plant at Chicago, the two-million-bushel storage project at Chattanooga, and the bulk and sacked feed warehousing and loading out facilities at Marion, Ohio, and Madison, Wis.," President McMillen said.

Research

In the area of research, he reported that "large expenditures were invested this past fiscal year in the development of new products and processes for agriculture and industry. Also, new experimental units on the expanded McMillen feed research farm near Decatur, Ind., have strengthened our ability to evaluate Master Mix Feeds and to determine the effect of management practices on their performance."

Looking to the current year, Mr. McMillen said, "Continuing efforts are being made to further establish Central Soya in foreign soybean meal and oil markets. Products from our Chemurgy division are receiving greater market acceptance, prospects for our feed division are brighter, and there are indications that margins for both processing and grain merchandising are showing some improvement."

At the start of the meeting, shareholders viewed the company's institutional movie, "Tomorrow's Foodpower," which portrays the importance of protein food production and the contributions made by the soybean processing, feed and grain industries.

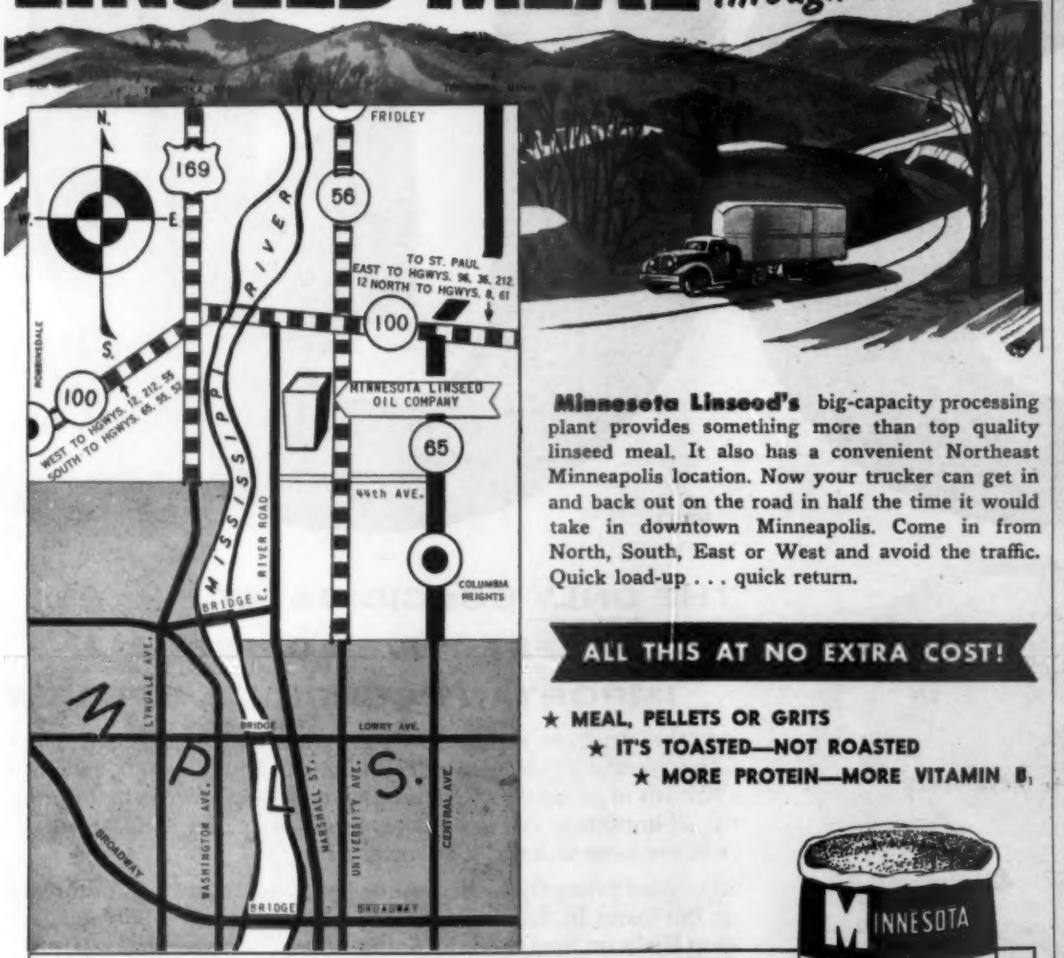
During the business session, the group reelected as directors: Dale W. McMillen, Harold W. McMillen, Dale W. McMillen, Jr., Robert B. Parrott, Wilbert E. Huge, Edward T. Schele, John D. Shoaff and Cole J. Younger.

Officers Reelected

After the meeting, the board of directors met and reelected the following officers: Harold W. McMillen, chairman of the board; Dale W. McMillen, Jr., president; Robert B. Parrott, executive vice president; Wilbert E. Huge, Joseph F. Jones, Jake L. Krider, Norman F. Kruse, Burt A. Townsend and Richard O. Westley, vice presidents; Edward T. Schele, secretary and treasurer; John L. Andreas, assistant secretary and assistant treasurer; Richard N. Allen, assistant secretary and controller, and Donald O. Cuthbert, assistant secretary.

DEALERS . . . Save this Map

Pick up your LINSEED MEAL without driving through the city!



Minnesota Linseed's big-capacity processing plant provides something more than top quality linseed meal. It also has a convenient Northeast Minneapolis location. Now your trucker can get in and back out on the road in half the time it would take in downtown Minneapolis. Come in from North, South, East or West and avoid the traffic. Quick load-up . . . quick return.

ALL THIS AT NO EXTRA COST!

★ MEAL, PELLETS OR GRITS
★ IT'S TOASTED—NOT ROASTED
★ MORE PROTEIN—MORE VITAMIN B₁

Write . . . Wire . . . Phone for a Quotation

MINNESOTA LINSEED OIL CO.

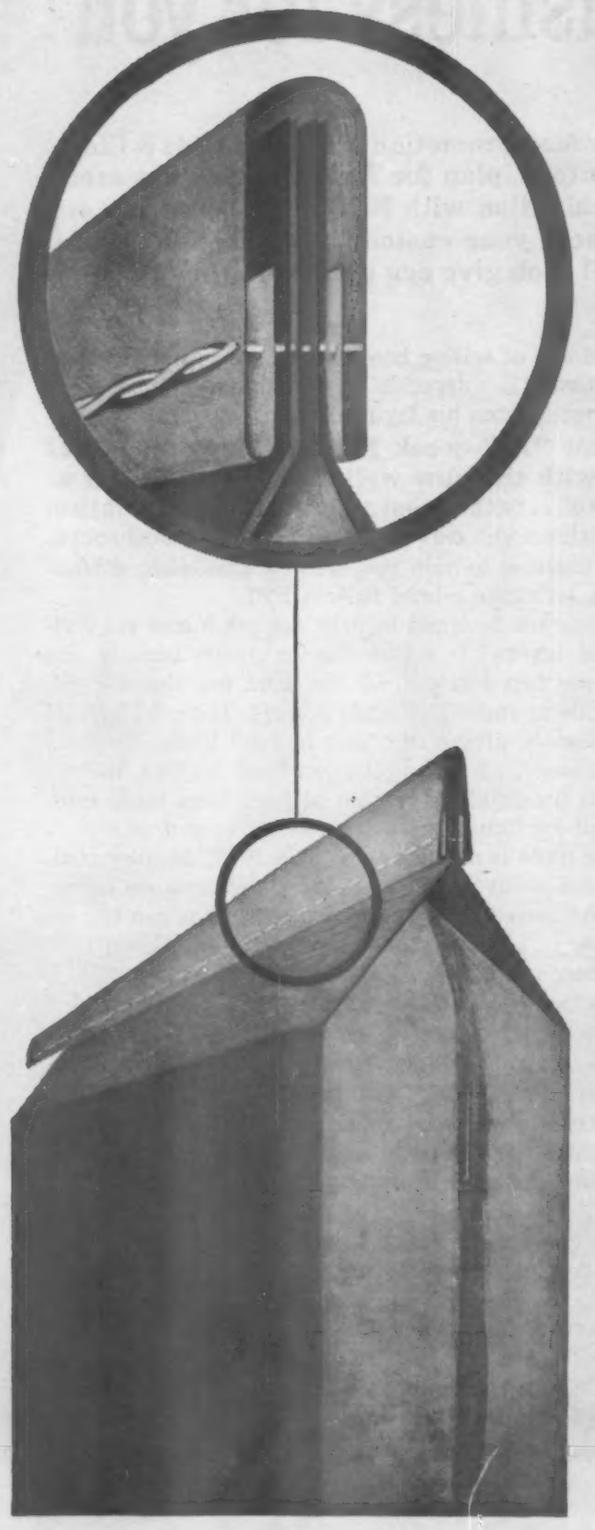
MINNEAPOLIS 21, MINNESOTA • SUNSET 8-9011

DISTRIBUTED BY THE FOX COMPANY
FOXCO
QUALADEE
A and D VITAMIN OIL
NEWFIELD NEW JERSEY
"PRODUCTS OF PROGRESS"

ANOTHER TECHNICAL ADVANCE FROM WEST VIRGINIA

NEW ImpacTAPE™

DRASTICALLY REDUCES SEWN-END BAG FAILURE



Pioneer in the development of Clupak* extensible paper, West Virginia now leads the way to a far stronger, tighter, money-saving sewn multiwall through "ImpacTape."

ImpacTape is a revolutionary new type of sewn tape closure** that adds four layers of tape to the sewn end instead of the conventional two. This provides *49% greater toughness* than standard sewn 70-lb. tape closures plus a new "cushioning" against impact shock.

PROOF from actual field trial

A leading cement company had an unusually high sewn valve breakage rate of 1%. They packed a trial shipment of bags, using West Virginia's new ImpacTape. Average breakage rate went down to .3%—a reduction of 70%. Dollar savings from reduced breakage will far exceed the small upcharge for the new closure.

PROOF from new testing technique

The development of ImpacTape was hastened by West Virginia's successful adoption of the Impact Resistance Tester to measure sewn end toughness under conditions of sudden shock. It represents the only sewn closure test devised thus far which bears a predictable correlation to drop tests and actual field performance.

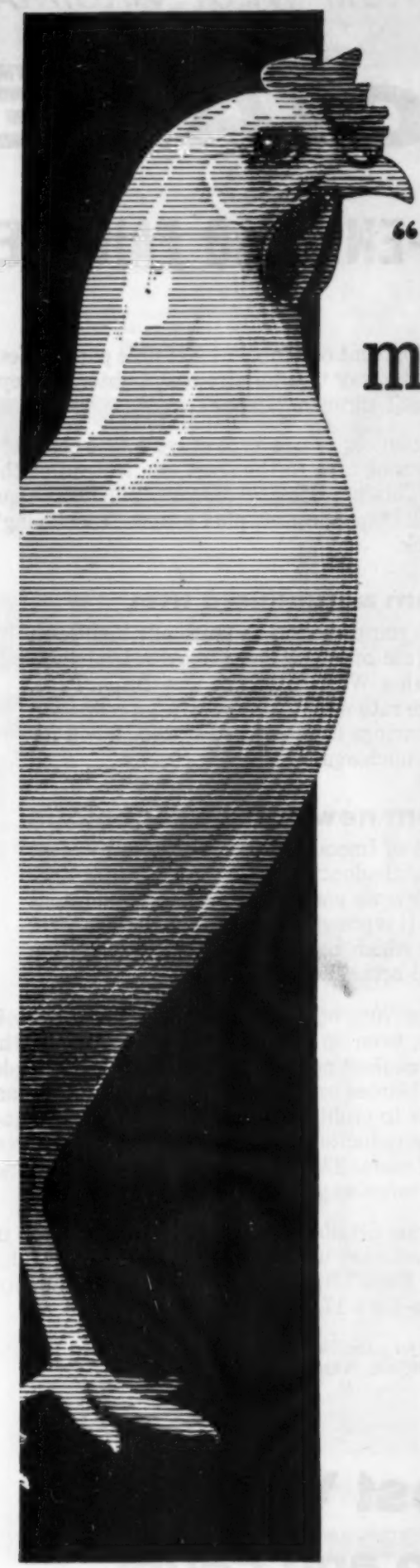
Studies indicate that 70% of sewn bag breakage ordinarily is at the sewn closure, even on Clupak paper bags, because the sewn closure is the weakest point in the bag. Often this breakage was incorrectly blamed on the paper. Now stronger ImpacTape opens the door to profits from the greater toughness and possible basis weight reductions which Clupak paper is delivering to thousands of users. *This is realistic research achievement —aimed straight at reducing your total packaging costs.*

For a brochure giving detailed information, write and tell us whether you use sewn open mouth or sewn valve bags. Multiwall Bag Division, West Virginia Pulp and Paper Company, 230 Park Ave., New York 17, N. Y.

**Clupak, Inc.'s trademark for extensible paper manufactured under its authority and satisfying its specifications.*

***Patent Pending.*

West Virginia
Pulp and Paper



HESS & CLARK'S

"TWO-WEEK TUNE-UP" means business for you!

Here's another new feed-promotion idea from Hess & Clark. It's a "reconditioning" plan for laying flocks that aren't doing well. In combination with FPI, it will help you sell more feed...will help your customers get better results. The ad at right will soon give egg producers the full story.

Prospering in your business of selling layer feed... as in our business of selling feed medications . . . depends on one thing: helping your customer make more money from his laying flock.

Hess & Clark's new "Two-week Tune-up" idea for layers ...in combination with the now well-known Full Performance Index (FPI) plan...is the most aggressive combination of feed-promoting ideas yet devised to help egg producers.

The two plans work together to help you get new customers. *Enthusiastic* customers. First, let's take a brief look at FPI.

FPI is a complete program designed to help egg producers get *Full Performance* from their layers. It sets goals for money-making egg production: 250 eggs per hen housed; 4.5 lbs. feed per dozen eggs; 90% laying house livability; and 90% Grade A eggs. Then, FPI helps poultrymen meet these goals, giving emphasis to good birds . good feed . good management . . . and nf-180 low-level feeding. nf-180, fed to provide 25 grams furazolidone per ton of feed, frees birds from a major obstacle to Full Performance — *constant disease drag.*

Poultry scientists say there is no such thing as a 100% healthy bird. Subclinical infections are always present, holding performance down. In combination with the winter "stress-season," *disease drag* can trigger really dangerous disease . . . cause costly laying slumps. When that happens, an egg producer needs help. Fast!

That's why Hess & Clark developed the "Two-week Tune-up" idea ... to help flock owners snap birds out of laying slumps and to provide an opportunity for you to get additional customers on the FPI program.

The "Two-week Tune-up"...using an nf-180 "booster-type" feed containing 100-200 grams furazolidone for 14 days* ...cleans birds out...clears up hidden troubles and stresses that drag performance and efficiency down...gets birds laying again.

Tape-recorded interviews reveal that the majority of egg producers who now feed nf-180 continuously got started when they had flock problems. It adds up to this: help a poultryman out of trouble with an nf-180 "booster-type" feed, and you've got a new FPI customer.

Contact your Hess & Clark salesman immediately for full details on the "Two-week Tune-up." (If you don't carry an nf-180 "booster-type" feed, see about adding it to your line.)

*See nf-180 label for further details.

19

FARM AND POULTRY MAGAZINES WILL CARRY THE "TWO-WEEK TUNE-UP" STORY IN JANUARY AND FEBRUARY

When winter stresses drag egg production below FPI goals, "recondition" your layers with a...

"TWO-WEEK TUNE-UP" for Full Performance

Just as your car needs a seasonal "tune-up" to keep performing at top efficiency, an nf-180 "Two-week Tune-up" can make a world of difference in layer performance.

nf-180 "reconditioning" cleans birds out. It clears up stress-caused drags that pull production and efficiency down. Particularly, it helps birds hold a steady rate of lay through weather changes that can trigger laying slumps when birds near the end of their early peak.

Producing in the high 70's or 80's for two or three months is a real strain on a still-growing young pullet. It wears her down to the point where winter stress or disease can really pull the rug out from under egg production.

"Tune-up" your layers

See your feed dealer. He can probably provide you with the nf-180 "booster" feed you need—one containing 100-200 grams furazolidone per ton of total ration. If your dealer does not have an nf-180 "booster-type" feed, he can easily mix it for you by adding nf-180 to your present layer feed.

"Tune-up" layer performance by feeding this nf-180 "booster-type" feed for 14 days. Check what happens. Watch egg production . . . feed consumption . . . mortality . . . and the general vigor of your birds. At the end of two weeks, you'll see a real difference in layer performance.

Next step: FPI plan

When you've finished "reconditioning" your birds and checked the results, you decide if nf-180 was worthwhile. Most likely you'll want to continue to get nf-180 benefits.

Hess & Clark's new FPI (Full Performance Index) plan is a practical, low-cost way to do it. Your feed dealer can supply you with an FPI laying feed containing a low level of nf-180 (25 grams furazolidone). The cost is only about a penny per hen each month . . . the return, many times that in extra income.

The FPI plan, though, includes far more than just nf-180 protective feeding. It is the most comprehensive program ever devised to help you make more money from layers. First, FPI sets goals for profitable egg production: 250 eggs per bird; 4.5 feed conversion; 90% Grade A eggs; and 90% laying house livability.

Then, FPI outlines the way to meet these goals. Good birds, good feed, careful management and nf-180 to control disease drag all get proper emphasis. Your feed dealer can supply you with free record charts to help you keep flock performance on target toward FPI goals.

Goals Full Performance

The principle behind nf-180 "reconditioning" is simple: Two weeks feeding of an nf-180 "booster-type" feed cleans out the many hidden troubles and stresses that hold production down . . . "tunes-up" birds so they can meet their fed-in, bred-in laying potential. Then, when they're up to full performance, a continuous low level of nf-180 helps keep your flock at this high level.

(If for any reason your dealer can't supply nf-180, write us immediately. Give your dealer's name. We'll send him full details.)

The page at right has more interviews with poultrymen who have found nf-180 the answer to layer health and production problems.

John Lutter, New Freedom, Pennsylvania

Martin Schuttinger, Jr., Lakewood, New Jersey

Ralph Jarosh, Waukesha, Wisconsin

HESS & CLARK
ASHLAND, OHIO
Division of Richardson-Merrell Inc.

T. C. Gray, Iva, South Carolina

Calvin Jones, Malvern, Ohio

Full-page and spread ads, like the one above, will carry Hess & Clark's new "Two-week Tune-up" plan to egg producers. This big advertising push in January and February supplements our regular FPI advertising . . . gives added impact. The FPI program is backed by 65,000,000 ad page impressions . . . and millions more on radio. A feed manufacturer recently summarized the result of Hess & Clark advertising: "So many people have come in asking about FPI and wanting to get started on it," he said, "that I can't get along without an FPI feed."

FPI
250 EGGS
4.5 Lbs. FEED CONVERSION
90% LAYER LIVABILITY
90% GRADE AA OR A EGGS
CONTINUOUS LOW-LEVEL nf-180 FEEDING

HESS & CLARK
ASHLAND, OHIO
Division of Richardson-Merrell Inc.

NT 6 9

Convention Calendar

New Listings

For the convenience of readers who scan the Convention Calendar regularly for new listings, those added to the columns in the current week appear separately from ones which have been entered previously. The following week they will be moved to their proper slot where they will remain until the event is held.

1961

June 20-21—Alabama Poultry Industry Assn.; Whitley Hotel, Montgomery, Ala.; sec., W. L. Walsh, Box 567, Montgomery.

Aug. 24-27—Georgia Poultry Institute; Rock Eagle 4-H Club Center, Eatonton, Ga.; Dewey McNiece, Extension Poultry Dept., University of Georgia, Athens.

Sept. 27-29—National Feed Ingredients Assn.; Lake Lawn Lodge, Delavan, Wis.; sec., I. Levin, 517½ E. Locust St., Des Moines 9, Iowa.

Dec. 6-7—Cornell Poultry Servicemen's Clinic; Cornell University, Ithaca, N.Y.

Dec. 6-7 — North Dakota Turkey and Egg Convention; Fargo Civic Center Auditorium, Fargo, N.D.; sec., Irving J. Mork, Fargo.

Dec. 7 — Upper Peninsula Feed Dealers Assn.; State Office Bldg., Escanaba, Michigan; sec., J. O. MacInnis, Box 342, Sault Ste. Marie.

Dec. 7-8—Midwestern Quickie Convention; Conrad Hilton Hotel, Chicago; Don M. Turnbull, sec., American Poultry & Hatchery Federation, 521 E. 63rd St., Kansas City 10, Mo.

Dec. 8 — Arizona Grain and Seed Assn.; Westward Ho Hotel, Phoenix; sec., Willis F. Nielson, Box 787, Mesa, Ariz.

Dec. 8—Ohio Agricultural Marketing Conference; Ohio Union Bldg., Ohio State University, Columbus; John W. Sharp, Room 334, Agr. Admin. Bldg., 2120 Fyffe Road.

Dec. 8-9—Eastern Quickie Convention; Ben Franklin Hotel, Philadelphia; Don M. Turnbull, sec., American Poultry & Hatchery Federation, 521 E. 63rd St., Kansas City 10, Mo.

Dec. 12-13 — Midwest Veterinary Nutrition Conference; Continental Hotel, Kansas City; Lloyd Larson, Midwest Feed Manufacturers Assn., 20 W. 9th St. Bldg., Kansas City 5, Mo.

Dec. 13-15 — Minnesota Poultry Hatchery Assn.; Hotel Radisson, Minneapolis, Minn.; sec., L. L. Baumgartner, Litchfield, Minn.

Dec. 15-16 — Business Clinic for Elevator Managers; Kellogg Center, Michigan State University, East Lansing; Carleton C. Dennis, Department of Agricultural Economics.

1961

Jan. 4-6—National Turkey Federation; Conrad Hilton Hotel, Chicago, Ill.; sec., M. C. Small, P.O. Box 69, Mt. Morris, Ill.

Jan. 9-10—Kansas Formula Feed Conference; Umberger Hall, Kansas State University, Manhattan; chm., Prof. T. B. Avery, Poultry Husbandry Dept., W. Waters Hall.

Jan. 12-13—Michigan Feed & Grain Dealers Assn.; Michigan State University, Kellogg Center; sec., Nevel Pearson, P.O. Box 472, East Lansing.

Jan. 13-14—Florida State Poultry Producers Assn.; Cherry Plaza Hotel, Orlando, Fla.; chm., Wilfred D. Hedges, 227 Blossom Lane, Winter Park, Fla.

Jan. 15-17—Indiana Grain & Feed Dealers Assn.; Claypool Hotel, Indianapolis; sec., Fred K. Sale, 600 Board of Trade Bldg., Indianapolis 4.

Jan. 16-17—Northwest Retail Feed Assn.; Hotel Pick-Nicollet, Minneapolis; sec., W. D. Flemming, 112 Grain Exchange Bldg., Minneapolis, Minn.

Jan. 23-25—Farmers Grain Dealers Assn.; Civic Memorial Auditorium, Fargo, N.D.; sec., Lloyd C. Hanson, 513 Black Bldg., Fargo.

Jan. 23-25 — Southeastern Poultry & Egg Assn.; Municipal Auditorium, Atlanta, Ga.; sec., Harold E. Ford, 235 E. Ponce de Leon Ave., Decatur, Ga.; for reservations: Atlanta Convention Bureau, Rhodes-Haverty Bldg., Atlanta.

Jan. 27 — Missouri Turkey Day; University of Missouri, Columbia; E. M. Funk, sec., Missouri Poultry Improvement Assn., Poultry Bldg., Box 568, Columbia.

Jan. 31-Feb. 1—Illinois Agricultural Industries Forum; University of Illinois, Urbana; Department of Agricultural Economics, 305 Mumford Hall.

Jan. 31-Feb. 1 — Hoosier Turkey Trot; Purdue Memorial Union, Purdue University, Lafayette, Ind.; John N. Howell, Turkey Department, Indiana State Poultry Assn., Poultry Bldg., Purdue University.

Feb. 1-2—Illinois Nutrition Conference; University of Illinois, Urbana; chm., E. E. Hatfield, Department of Animal Science.

Feb. 1-2—New Hampshire Poultry Health Conference; Memorial Union Bldg., Durham; sponsored by Department of Poultry Science, University of New Hampshire; Prof. W. C. Skoglund, Poultry Science Dept.

Feb. 2—Beef Cattle Study Day; University of Arkansas Agricultural Experiment Station, Fayetteville.

Feb. 2-3—Oregon Animal Nutrition Conference; Withycomb Hall, Oregon State College, Corvallis.

Feb. 3-4—Minnesota Turkey Growers Assn.; Leamington Hotel, Minneapolis; sec., Roy Munson, 2200 University Ave., St. Paul, Minn.

Feb. 6-7—Montana Nutrition Conference; Montana State College, Bozeman; chm., Dr. O. O. Thomas, Animal Industry and Range Management Dept.

Feb. 7-10 — American Dehydrators Assn.; Jung Hotel, New Orleans, La.; executive vice president, Joseph Chrisman, 430 Board of Trade Bldg., Kansas City 5, Mo.

Feb. 8-9—Pacific Northwest Feed Mill Production School; Hotel Leopold, Bellingham, Wash.; sponsored by Washington State Feed Assn.; mgr., John G. Wilson, 814 Second Ave. Bldg., Seattle 4.

Feb. 10 — Washington State Feed Assn., annual convention; Hotel Leopold, Bellingham, Wash.; mgr., John G. Wilson, 814 Second Ave. Bldg., Seattle 4.

Feb. 10-11—Poultry Fact Finding Conference; sponsored by Institute of American Poultry Industries; pres., Harold M. Williams, 59 E. Madison, Chicago 2.

Feb. 15—Turkey Short Course; University of Georgia, Athens.

Feb. 19-21—Midwest Feed Manufacturers Assn.; Hotel Muehlebach, Kansas City, Mo.; executive vice president, Lloyd S. Larson, 20 W. 9th St. Bldg., Kansas City 5, Mo.

Feb. 19-21 — Ohio Grain & Feed Dealers Assn.; Neil House, Columbus; sec., George G. Greenleaf, 5625 N. High St., P.O. Box 121, Worthington.

Feb. 22—Broiler Housing Symposium; University of Georgia, Athens.

Feb. 28-March 1—Virginia Feed and Nutrition Conference; Hotel Roanoke, Roanoke; sec., J. Paul Williams, Virginia State Feed Assn., 615 E. Franklin St., Richmond.

March 8 — Distillers Feed Conference; Sheraton Gibson Hotel, Cincinnati, Ohio; L. E. Carpenter, Executive Director, Distillers Feed Research Council, 1232 Enquirer Bldg., Cincinnati 2.

March 8-9 — Nebraska Grain & Feed Dealers Assn.; Sheraton-Fontenelle Hotel, Omaha; sec., Howard W. Elm, Trust Bldg., Lincoln, Neb.

March 10-11—Oklahoma Feed Industry Conference and Workshop; Oklahoma State University, Stillwater; chm., Dr. Rollin Thayer, Poultry Science Dept.

March 15—Commercial Egg Production Short Course; University of Georgia, Athens.

March 16-17—Oregon Feed & Seed Dealers Assn.; Sheraton-Portland Hotel, Portland; mgr., Russ Hays, 702 Lewis Bldg., Portland 4.

March 16-17 — Maryland Nutrition Conference; Shoreham Hotel, Washington, D.C.; chm., Dr. R. D. Creek, Poultry Husbandry Dept., University of Maryland, College Park.

March 20-24—Grain & Feed Dealers National Assn.; Washington D.C.; sec., Herbert L. Sharp, 400 Folger Bldg., Washington 5, D.C.

April 3-4 — National Institute of Animal Agriculture; Purdue University, Lafayette, Ind.; sec., Karl D. Butler, P.O. Box 521, First National Bank Bldg., Ithaca, N.Y.

April 9-13 — American Association of Cereal Chemists; Baker Hotel, Dallas, Texas; 1955 University Ave., St. Paul 4, Minn.

April 10-12—Poultry & Egg National Board; Sheraton Towers Hotel, Chicago, Ill.; mgr., Lloyd H. Geil, 8 S. Michigan Ave., Chicago 3.

April 13-15—Pacific Dairy & Poultry Assn. Exposition and Convention; Riviera Hotel, Las Vegas, Nev.; asst. sec., Lloyd J. Powers, 1304 7th St., Los Angeles 21, Cal.

April 20-22—California Hay, Grain & Feed Dealers Assn.; Jack Tar Hotel, San Francisco; sec., Leo L. Johnson, Blue Anchor Bldg., 1400 10th St., Sacramento 14.

April 24-26—Animal Health Institute; Mayflower Hotel, Washington, D.C.; sec., D. L. Bruner, 512 Shops Bldg., Des Moines, Iowa.

April 27-29—Kansas Grain & Feed Dealers Assn.; Broadview Hotel, Wichita; sec., Orris E. Case, 609 Wiley Bldg., Hutchinson.

May 5—Broiler Short Course and Chicken-of-Tomorrow Day; University of Georgia, Athens.

May 7-10—American Feed Manufacturers Assn. Convention and National Feed Show; Conrad Hilton Hotel, Chicago, Ill.; sec., W. T. Diamond, 53 West Jackson Blvd., Chicago 4.

May 7-10—Association of American Feed Control Officials; Hamilton Hotel, Chicago; sec., Bruce Poundstone, Head, Feed and Fertilizer Control Dept., University of Kentucky, Lexington.

May 14-15—Missouri Grain & Feed Assn.; Hotel Coronado, St. Louis, Mo.; sec., D. A. Meinershagen, Higginsville, Mo.

June 8-11 — Canadian Feed Manufacturers Assn.; National Convention; Manoir Richelieu, Murray Bay, Quebec; national secretary, W. N. Hendrick, 2901 Bloor St. W., Toronto 18, Ont.; for registrations, T. G. Sevigny, Room 100, 355 McGill St., Montreal 1, Quebec.

July 18-20—American Poultry Congress & Exposition; Municipal Auditorium, Minneapolis; Don M. Turnbull, sec., American Poultry & Hatchery Federation, 521 E. 63rd St., Kansas city 10, Mo.

July 24-28 — Southeastern Egg Quality and Grading School; Auburn University, Auburn, Ala.; sec., Southeastern Poultry & Egg Assn., Harold E. Ford, 235 E. Ponce de Leon Ave., Decatur, Ga.

Aug. 24-26 — North Carolina Feed Manufacturers Assn.; Virginia Beach, N.C.; sec., McNair Evans, Box 44, Mocksville.

Sept. 19-21 — Marketing Seminar for Feed Manufacturers; Morrison Hotel, Chicago; Sales Executives Council, American Feed Manufacturers Assn., W. E. Glennon, president, 53 W. Jackson Blvd., Chicago.

Sept. 27-29—Pennsylvania Millers & Feed Dealers Assn.; Hotel Hershey, Hershey, Pa.; sec., D. W. Parke, P.O. Box 329, Ephrata, Pa.

Oct. 4-6—Texas Nutrition Conference; Texas A&M College, College Station; chm., Dr. J. R. Couch, Poultry Science Dept.

Oct. 23-25 — Centennial Nutrition Conference; Hotel Muehlebach, Kansas City 5, Mo.; sponsored by Midwest Feed Manufacturers Assn. and Land-Grant Colleges in Midwest's area; executive vice president, Lloyd S. Larson, 20 W. 9th St. Bldg., Kansas City 5, Mo.

Nov. 8-9—Illinois Feed Assn.-Illinois Poultry and Hatchery Federation joint convention; Springfield Armory, Springfield; sec. I.F.A., Dean M. Clark, 141 W. Jackson Blvd., Chicago 4; sec. I.P.H.F., Aubrey Harless, Shelbyville, Ill.

1962

Aug. 13-18—12th World's Poultry Congress; Show Grounds of the New South Wales Royal Agricultural Society, Sydney, Australia; **Dr. Cliff D. Carpenter, chairman, U.S. Participation Committee, 1207 Emerald Bay, Laguna Beach, Cal.; Dr. A. William Jasper, secretary, c/o AFBF, 2300 Merchandise Mart, Chicago 54, Ill.**

CALENDAR FOR 1960-61

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MAY

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OCTOBER

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NOVEMBER

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...be prepared to take advantage of favorable market conditions...

Include the term "defluorinated phosphate" on your registration forms, bags and tags, and you can interchangeably formulate with either defluorinated or dicalcium phosphate

The AAFCO definition states: "Defluorinated phosphate includes either calcined, fused or precipitated calcium phosphate. It shall contain not more than one part of fluorine (F) to 100 parts of phosphorus (P). The minimum percentage of calcium (Ca) and phosphorus (P) and the maximum percentage of fluorine (F) shall be stated on the label. The term 'Defluorinated' shall not be used as a part of the name of any product containing more than one part of fluorine (F) to 100 parts of phosphorus (P)."

When you register your feeds to contain defluorinated phosphate, this definition provides for the use of *either* defluorinated or dicalcium phosphate. By inadequate registration, you restrict your phosphorus source.

Formulate with either defluorinated or dicalcium phosphate by registering your feeds *now* to include the term "defluorinated phosphate."

Use a defluorinated phosphate tried and tested by State Agricultural Experiment Stations and unaffiliated laboratories . . . CDP. CDP is ALL biologically useable . . . handles easily in bags or bulk.

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James E. Davis Heads Delmarva Poultry Industry, Inc.

GEORGETOWN, DEL.—James E. Davis of Seaford was elected here recently to head the Delmarva Poultry Industry, Inc. He succeeds Webb Cassell of Salisbury. Mr. Davis is manager of the Seaford plant of General Mills, Inc. He was chairman of the 1960 poultry fund drive. Over $121,000 was contributed by businesses and friends of the industry to promote the broiler industry here. He is also chairman of transportation and facilities committee which has investigated lower rail rates for shipment of feed ingredients from the Midwest to the east coast.

James E. Davis

Last year Mr. Davis was Delaware's vice president of DPI. He also has been a director for several years. He has been with General Mills 19 years in various capacities, many of which were concerned with the broiler industry.

Also elected were A. E. Bailey, of Rehoboth, Delaware's vice president, and Sam Quillen, Salisbury, Maryland's vice president. Mr. Bailey is associated with Townsends, Inc., and Mr. Quillen is with the Salisbury Milling Co. Richard Clem, agricultural representative of the Easton National Bank, was elected secretary. Roland Hastings, Laurel, associated with Charles N. Landon, Inc., was reelected treasurer.

DPI in the past has spent most of its efforts in the promotion of the shore's broilers. The promotion was centered around the Delmarva Chicken Festival, the National Chicken Cooking Contests, and widespread use of recipes produced at cooking contests.

New Look

Mr. Davis said a "new look" is now under way. More emphasis is being placed on merchandising poultry, dealing more directly with members of the trade and other key food people in the principal market areas.

This new look will include research directly connected with Delmarva's interest rather than poultry promotion in general. There are plans for seminars and workshops in an effort to aid training and development of industry leaders on the peninsula. New product development will be emphasized.

Mr. Davis said the chicken cooking contest has been national in scope for several years. Last year a record number of states and broiler areas were represented. This coming year DPI hopes to get entries from all broiler areas and all states. Cooking contestants will hear about the chicken festival through their grocery stores and other segments of the poultry trade. "We will be merchandising our poultry while staging the contest," Mr. Davis said.

Some 40 officers and directors met at Bill's Seafood Inn for the election and business meeting.

ADM Fills Grain Post

MINNEAPOLIS — Appointment of John J. Blowers as grain merchandiser in charge of Archer-Daniels-Midland Co.'s grain operations at Kansas City, Mo., was announced by Ralph Bruce, ADM vice president and grain division manager.

In addition to all wheat and coarse grain merchandising at Kansas City, Mr. Blowers will handle wheat procurement for ADM's North Kansas City and St. Joseph, Mo., flour mills.

A veteran of more than 30 years in the grain industry, Mr. Blowers began his career as an elevator operator for Standard Milling Co. He advanced through a number of supervisory and merchandising positions with Standard before joining ADM.

One bag shattered . . . the other has two-way stretch

The *unbroken* bag is made of H&W's new high-strength Expanda-Kraft.

As the lift truck braked to a sudden stop, both bags flew through the air and fell hard against the concrete floor. The regular kraft bag split open — note the spilled flour. Yet, look closely at Expanda-Kraft. *Not a sign of breakage*! Naturally, both bags were identical in basis weight and number of plies.

Expanda-Kraft is stronger, because it's made by a special roll-crepe process. It's resilient, has two-way stretch that soaks up shock. Available in white, semi-bleached and natural.

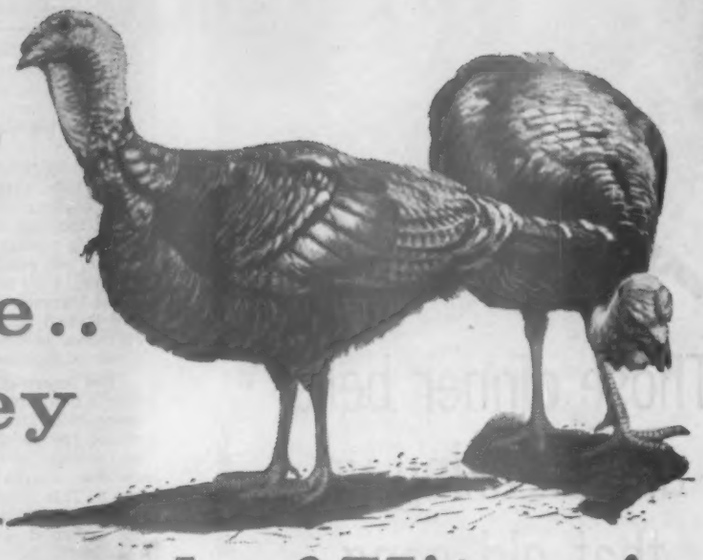
Expanda-Kraft comes in 40, 50, 60, 70, 80 and 100-pound basis weights. *For samples and information,* write Hollingsworth & Whitney, Division of Scott Paper Company, Chester, Pennsylvania.

EXPANDA-KRAFT®

HOLLINGSWORTH & WHITNEY DIVISION OF SCOTT PAPER COMPANY

McCabe Grain Company Limited
WINNIPEG-VANCOUVER
LONDON, ENGLAND
Schwartz & Co., (Grain) Ltd.
Victoria Products and Grain
(overseas agents) Ltd.

for maximum antibiotic performance.. fortify turkey rations with the Merck brand of Vitamin B_{12}



Turkey starter, grower ***and*** breeding rations must be fortified – for best results – with high-quality micronutrients, including the all-important – vitamin B_{12}.

The uniformly stable cobalamins in the Merck Vitamin B_{12} supplements are invaluable in promoting normal growth, enhancing the performance of antibiotics and assuring maximum production and hatchability of fertile eggs.

Test after test has demonstrated that B_{12}-supplementation of turkey feeds is ***economically*** sound in preventing the slow growth associated with B_{12}-deficient diets. In addition, B_{12} is needed for the maximum utilization of other nutrients, such as choline and methionine.

The use of ***Merck Vitamin B_{12}*** supplements is your assurance of product stability, uniformity and quality, supported by over 30 years of Merck Research, Service and ***Know-How***. A wide group of potencies are available to fit your specific formulation needs.

Remember: The incidence of multivitamin deficiencies in high-energy rations may be more prevalent than that of single vitamin deficiencies. Be sure to check ***all*** your vitamin levels—including B_{12}—when you formulate your prestarter, starter and grower rations.

Still looking for an effective, low-cost antibiotic supplement? Set up a split-pen feeding trial with PRO-STREP® and demonstrate—with on-the-farm results—how PRO-STREP can pay off for you ***and*** your growers. And—with your next Merck custom premix order be sure to ask for S.Q.® and HEPZIDE® ...help fortify your rations with "built-in" protection against coxy, blackhead and hexamitiasis. Merck & Co., Inc., Chemical Division, Rahway, New Jersey.

the Merck brand of B_{12}...assured stability

B12

...uniformity and quality...

Recommended Vitamin B_{12} Levels in turkey rations:

Starter	Grower	Breeder
12 mg./ton	6 mg./ton	6 mg./ton

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Those dinner bells are breaking up that old gang of mine. *

When the dinner bell rings, more cattle bawl and pigs grunt and chickens chirp for Kent. That's why Kent dealers make more money . . . they sell gang after gang of Kent.

*to be musically accompanied by ringing cash registers.

KENT FEEDS

THE FEED WITHOUT A FILLER

Muscatine, Iowa Sioux City, Iowa

ENERGY INTAKE

(Continued from page 43)

treatments combined is presented in Table 4 and Figure 1 in which it is noted that the difference in egg production between the two temperature treatments is highly significant.

This difference would amount to an increase of seven eggs per bird per year which, with an average market value of 36¢ per dozen, would amount to an increase of 21¢ per bird. Add to this a saving in feed consumption of 4 lb. per year will result in an additional 14-16¢ income per bird. These added together amount to 35-37¢ per bird housed and might represent the difference between profit and loss in a year of depressed egg prices.

Feed consumption was also reduced when uniform temperatures were maintained. This resulted irrespective of the energy content of the ration or the form of the feed. These data are also summarized in Tables 4, 5 and 6. This amounted to a saving in feed consumption of about 4%. When the increased egg production is also considered, the improvement in feed efficiency was 7%. These are the type of production economies that must be taken into account in modern narrow-margin competitive egg production.

Litter condition and litter moisture data are also presented in Tables 4, 5 and 6. Higher values are shown in this study as the samples taken for moisture analysis were obtained from the surface of the litter in the areas used most frequently by the birds between the feeding-roosting racks and the nest. It will be noted in Table 4 that the low-energy ration resulted in higher litter moisture. The difference between the energy levels (43.9 and 37.2%) does not appear great, but the difference was actually very marked. The litter in pens fed the high-energy rations was in quite good condition at all times and easily workable. In contrast, the litter in the low-energy pens was damp on the surface and excessive caking occurred between weekly stirring and sample collections. The form of the feed did not appear to influence the litter problem to any extent.

The uniform and slightly higher house temperature also resulted in reduced litter moisture of approximately the same magnitude as the difference in energy. The low-energy ration fed as mash approached a satisfactory condition under uniform temperature conditions.

SUMMARY—A laying ration in which the major grain component is barley contains approximately 650 and 1,000 calories of productive and metabolizable energy, respectively. This level of energy is not adequate for maximum egg production, especially under climatic and poultry house conditions normally experienced in the northern portions of the U.S. Adequate energy intake will result when the low-energy ration is pelleted and fed as crumbles which will permit egg production equal to that obtained with a high-energy corn ration containing approximately 900 calories productive energy. The available energy of an all-barley ration would be marginal if the laying house temperatures were below 40-50° F. A major problem in feeding rations of extremely low-energy content in northern climates during winter months is excessive litter moisture which results from the increase of both feed and water consumption.

The information obtained in the second of the two experiments reported here indicates that improved production economies through increased egg numbers, decreased feed consumption and increased feed efficiency can be accomplished if the laying house temperature is kept at 55-60°. Modern poultry house construction, employing good insulation and ventilation, accompanied by bird population of 1.5-2.0 sq. ft. per bird will permit control of environmental temperatures similar to those used in this report, under the extreme severe winter temperatures experienced in Idaho.

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Cura-phos is guaranteed to contain not less than 14% phosphorous and 31% calcium, with not more than 0.5% fluorine. Let us send you *all* the facts about Cura-phos. Let us *prove* that Cura-phos is the best buy on the market today.

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NEW PRODUCTS • NEW SERVICE • NEW LITERATURE

DESCRIPTIONS OF NEW AND IMPROVED PRODUCTS AND SERVICES PROVIDED BY MANUFACTURERS AND SUPPLIERS ARE PRESENTED IN BRIEF FORM. FOR ADDITIONAL INFORMATION, PLEASE USE THE ACCOMPANYING COUPON.

No. 7208—Bird Repellent

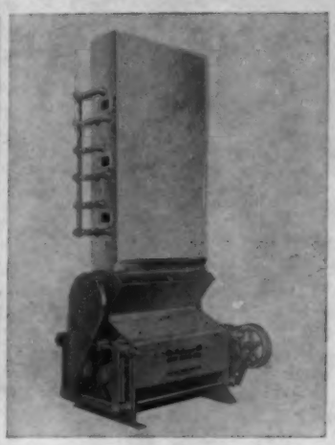
Seedburo Equipment Co. announces "Roost No More," a harmless chemical compound that the company says chases birds from buildings, trees and other roosting places. Application is made directly to the roosting area, either by brushing or spraying on in liquid form or by applying in cartridges with a standard caulking gun. Each application lasts for a year or more, the company says. The product was developed and manufactured by the National Bird Control Laboratories and is being distributed by Seedburo. For complete details, check No. 7208 on the coupon and mail.

No. 7209—No-Spill Device

The Frank G. Hough Co. has announced its HA, H-25 and HAH rubber-tired, tractor-shovel models with 2,000, 2,500 and 3,000 lb. capacities are available with "no-spill" bucket devices. The side sheets of the buckets are curved to conform to an arc traveled by a combination strikerbar-spillguard. The device hydraulically moves through the arc from the top side of the back of the bucket to the front and strikes off excess material which has been scooped into the bucket from the pile. The strikerbar then remains at the front as the bucket is rolled back and lifted to carry position. During travel, the device becomes a front spillguard in this same position and acts as a load retainer. Another feature of the device is the uniform loads which can be obtained. For details, check No. 7209 on the coupon and mail.

No. 7211—Grain Roller Mill

Roskamp Huller Manufacturing Co., Inc., announces the 16x42 grain roller mill with steamer. The heavy-duty mill, the company says, is designed to steam and roll 7 to 10 tons of grain an hour. It will roll 8 to 15 tons of dry grain an hour, the company says. The frame, bearings, controls and drives are engineered for maximum quality control of product. Solid white iron rolls are guaranteed operational for 10 years. The optional steamer is made of 10 gauge metal, galvanized inside and out and has nine steam spray heads and six adjustment valves. For details, check No. 7211 on the coupon and mail.



No. 7212—Dog Food Flavor

"Dognectar," a beef-bone flavor for dog food, has been announced by Flavor Corporation of America. According to the company, the flavor appeals to the dogs and is equally appealing (odor-wise) to humans. The product combines the soluble flavor elements of pure beef and bone extractives in concentrated form. It takes 1 lb. to flavor 2,000 lb. of wet or dry dog food. For complete information, check No. 7212 on the coupon and mail.

No. 7210—Combination Bag

A combination of an independent polyethylene tube and a multiwall paper shipping bag has been announced by Raymond Bag Corp. Called the MPS, the bag combines a complete seamless polyethylene tube as part of the multiwall, sewn and heat sealed above the sew line to give a perfect seal, the company says. Because of its construction, the polyethylene liner cannot pull out or slip, and makes a production line package that can be filled on existing equipment, the company says. For more details, check No. 7210 on the coupon and mail.

No. 7214—Bulk Truck

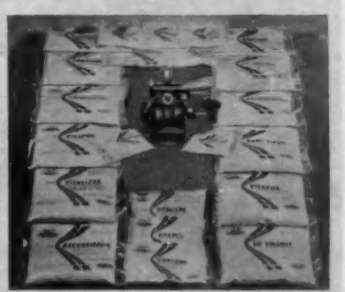
A new delivery truck designed for front unloading and loading of bulk materials is being marketed now by Productive Acres Mfg. Co. Its name: "Big Daddy." Company officials say all types of feed, including molasses feeds, can be moved with the truck through the use of an auger system which includes a 9-in. floor auger, a 12-in. upright auger and a 9-in. boom auger. Each of these augers is driven individually by its own hydraulic motor. The company reports that if any auger binds due to foreign objects in material being handled, a master safety valve automatically stops operation immediately. "Big Daddy" unloads or loads 1-1½ tons a minute. Pellets are handled with minimum breakage, Pamco claims. The new truck is available in 14-ft. and 20-ft. lengths in either Skoop Skipper or semi-trailer models. Capacities are 390 cu. ft. for the 14-ft. unit and 600 cu. ft. for the 20-ft. unit. The boom auger reaches up to 21 ft. For further information, check No. 7214 on the coupon and mail.

No. 7213—Mineral Mixes

A new and improved formula for its mineral mixes has been announced by the Corn King Co. The manufacturer says palatability and aroma have been improved by the addition of wet molasses, which also has "eliminated the need for a dust inhibitor." Vitamin D_3 has been added to the mixes to help control rickets and bone deficiencies and to aid utilization of both phosphorus and calcium, according to the company. Also, the new formula includes trace minerals of greater stability and palatability. Check No. 7213 and mail coupon for details.

No. 7207—Poultry Medications

A line of pre-measured poultry medications, color-coded and packed in plastic bags, has been announced by Vineland Poultry Laboratories. The packages are designed to be used with the Vinelab Crown Proportioner. To be known as "Crown-Pak" medi-



Send me information on the items marked:

- ☐ No. 7207—Poultry Medications
- ☐ No. 7208—Bird Repellent
- ☐ No. 7209—No-Spill Device
- ☐ No. 7210—Combination Bag
- ☐ No. 7211—Grain Roller Mill
- ☐ No. 7212—Dog Food Flavor
- ☐ No. 7213—Mineral Mixes
- ☐ No. 7214—Bulk Truck

Others (list numbers) .....

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In producing CYREA*, Cyanamid uses special quality-control checks at every stage of production and runs an analysis on every batch before bagging. You are assured of a feed grade urea that is guaranteed 42% nitrogen bag after bag.

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The biuret content of CYREA is extremely low. That means rumen bacteria are provided with maximum amounts of available nitrogen.

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CYREA comes in the form of small, rounded beads. These prills are subjected to several screenings to assure a uniform and perfect particle size for your feeds. Microprilling also means CYREA will be evenly distributed in the feed.

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CYREA flows freely when it's made—and when you use it. That's because each prill is coated. They won't cake or bridge. CYREA is available to you in 80-lb. moisture-resistant, polyethylene-lined multi-wall bags.

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cations, the products come in three sizes—to make 50 oz., 1 gal. and 5 gal. of concentrate solution. Products are instantly soluble, the company says. The feeder tube from the Crown proportioner is placed into the solution, and exactly 1 oz. of concentrate is introduced into each gallon of drinking water. Three new medications are available in the line, including "Vitalizer," a combination of high level antibiotics and vitamins; "Vitapol," a concentrate of vitamins recommended for flocks under stress, and "Coryzol," for the treatment of infectious coryza. For details, check No. 7207 on the coupon and mail.

Also Available

The following new products have been described in previous issues of Feedstuffs and information about them may still be obtained by jotting the appropriate number of the coupon and forwarding it to Feedstuffs.

No. 7142—Reference manual, Universal Hoist Co.

No. 7143 — Drying, conditioning unit, Habco Manufacturing Co.

No. 7144—Bulk feed stations, Seco, Inc.

No. 7145—Moisture register, Moisture Register Co.

No. 7146 — Feeder bulletin, B-I-F Industries.

No. 7147—Vitamin K report, Heterochemical Corp.

No. 7148—Improved milk replacer, Borden Special Products Co.

No. 7149—Bulk feed body, Henderson Manufacturing Co.

No. 7150 — Collapsible container, Highway Trailer Industries, Inc.

No. 7151—Portable feed bin, Blosser Manufacturing Co.

No. 7152—Protein analysis report, North Dakota Agricultural College.

No. 7153—Explosion protection system, Fenwal, Inc.

No. 7154—Feed ingredient analysis table, Stabilized Vitamins, Inc.

No. 7155 — Cob conveyor, Shelby Manufacturing Co.

No. 7156 — Broiler feeder, James Mfg. Co.

No. 7157—Bin vibrator, Eriez Manufacturing Co.

No. 7158—Poultry bags, Anderson Box Co.

No. 7159—Electronic control brochure, The Electronics Control Division of Flo-Tronics, Inc.

No. 7160—Bulk feed body, Winger Manufacturing Co.

No. 7161—Counter display units, Hess & Clark.

No. 7162—Grain trailer with belt conveyor, The Wilson Trailer Co.

No. 7163—Roll-to-back nest, Keen Manufacturing Corp.

No. 7164—5-ton vertical mixer, Jacobson Machine Works.

No. 7165 — Storage tank heating coils, Dean Products, Inc.

No. 7166 — Water-dispersible vitamins, Merck & Co., Inc.

No. 7167 — Hopper-level control, James Manufacturing Co.

No. 7168—Fork truck attachment, Clark Equipment Co.

No. 7169 — Intermediate range checkweigher, Toledo Scale Corp.

No. 7170—Valve bag packer, St. Regis Paper Co.

No. 7171—Sewing pedestal, Richardson Scale Co.

No. 7172—New coccidiostat, Merck & Co., Inc.

No. 7173—Grain storage equipment, Walsh Manufacturing Co.

No. 7174—Auger molasses mixer, Pacific Molasses Co.

No. 7175—Grain dryer, Figley Cox, Inc.

No. 7176—Auto advertising device, Travelads, Inc.

No. 7177—Gravity powered grain spreader, Habco Manufacturing Co.

No. 7178—Motion safety switch, Fuller Co.

No. 7179—Processing equipment catalog, Edw. Renneburg & Sons Co.

No. 7180—Feed analysis ingredient table, Stabilized Vitamins, Inc.

No. 7181—Pelleting data sheets, Baroid Chemicals, Inc.

No. 7182—Grate magnet brochure, Eriez Manufacturing Co.

No. 7183—Screw conveyor bulletin, Sprout, Waldron & Co., Inc.

No. 7184—Fat, oil applicator, Lingel Fat & Oil Applicator Co.

No. 7185—Gravity feeder, Thayer Scale Corp.

No. 7186—Egg producing program, Hess & Clark.

No. 7187—Rolling mill attachment, Barnard & Leas Manufacturing Co., Inc.

No. 7189—Expansion program, Sweet Manufacturing Co.

No. 7190 — Expanded hammermill line, Seco, Inc.

No. 7191—Grain cleaning machine, Ross Manufacturing & Sales Co.

No. 7192 — Vaccine administering method, Dorn & Mitchell Laboratories, Inc.

No. 7193 — Mold control bulletin, Monsanto Chemical Co.

No. 7194 — Detector catalog, Flo-Tronics, Inc.

No. 7195 — Hopper railroad car, Kurth Malting Co. and Pullman Standard.

No. 7196—Revolver feeder bulletin, Fuller Co.

No. 7197—New package size, Chas. Pfizer & Co., Inc.

No. 7198 — Hopper scale bulletin, Richardson Scale Co.

No. 7199—Molasses in silage described, Pacific Molasses Co.

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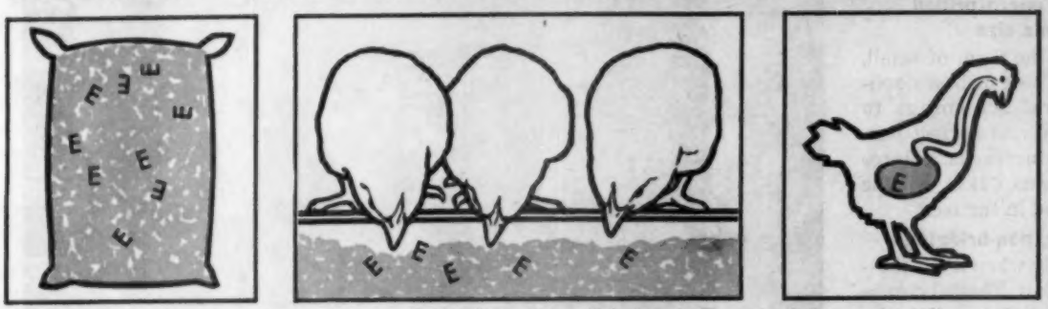
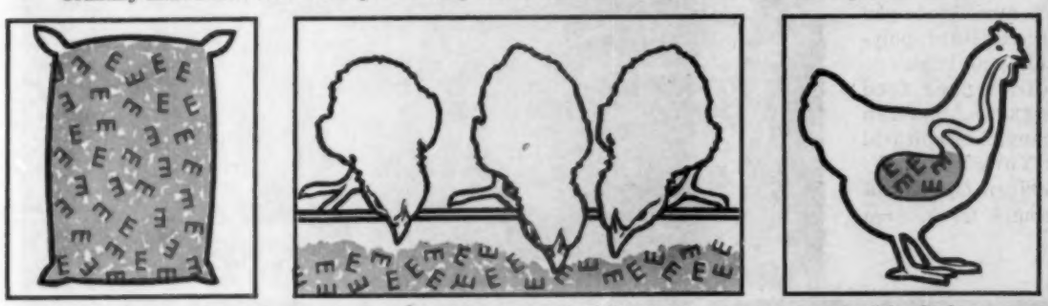


Ordinary antioxidant does nothing . . . to stop loss of essential vitamin E . . . needed to prevent diseases



Santoquin safeguards vitamin E . . . and also works like "E" itself . . . to guarantee healthy flocks

ONLY SANTOQUIN® FOOD VALUE GUARD MAKES SURE THAT ALL THE VITAMINS YOU PUT IN YOUR FEED WILL ACTUALLY NOURISH THE BIRD

Santoquin preserves *all* the food values you add to your feed . . . *all the way from mixing through metabolism*. Natural vitamins are protected. And Santoquin *itself* acts like vitamin E in the body of the bird . . . to prevent encephalomalacia ("crazy chick"), exudative diathesis, and muscular degeneration. Protects, too, against slow gain, dullness, poor feathering. And only Santoquin saves the pigment-forming xanthophylls . . . for brighter egg yolks and yellower-skinned broilers that bring top prices.

Only ¼ pound per ton does the job. Ask for Santoquin in your dehydrated alfalfa, premixes or in your concentrates. We'll be happy to send you *all* the facts. *Mail the coupon today.*

SANTOQUIN SAFEGUARDS . . . like no other poultry-feed antioxidant can

	Ordinary Antioxidant	SANTOQUIN
Prevents rancidity in feed	Yes	Yes
Protects vitamin A through digestion and metabolism	No	Yes
Preserves carotenes	No	Yes
Improves pigmentation by guarding xanthophylls	No	Yes
Acts in the bird like vitamin E to prevent diseases	No	Yes

MONSANTO CHEMICAL COMPANY
Organic Chemicals Division
Dept. 2757-A • St. Louis 66, Missouri

Monsanto

Please send me:
☐ "Santoquin Poultry Feeds." Tech. Bulletin FC-9
☐ "Question and Answer" brochure on Santoquin
☐ Names of premixers supplying Santoquin
☐ Research reports

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Company _____
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DOES A BETTER JOB — LONGER!

For mineral and salt feeding. It's portable, durable—all steel corrosion-protected! For details regarding dealerships write . . . .

COLLIER LIVESTOCK FEEDER CO.

BOX 896-G, RALLS, TEXAS

Salesmen Learn About Duties of Purchasing Agent in Feed Firm

Sales representatives of firms supplying the feed industry were given a detailed description of the duties of a feed company's purchasing agent during a special session of the National Feed Ingredients Assn. annual convention.

The description came from Stuart A. Campbell, district sales manager, nitrogen products division, W. R. Grace & Co., Chicago, in a talk delivered before the manufacturers' representatives section of the convention at Burlington, Wis. He briefly covered the principles, functions and objectives of a feed company and related them to the representative's job of selling to the feed industry and his contacts with purchasing agents.

"The purchasing agent of a feed company is a busy fellow," Mr. Campbell commented. "His general function is to purchase the ingredients for the mill, including the determination of the quantity to be purchased, flow of ingredients into the mill and the supplier's compliance with contract."

List of Duties

Duties in addition to actual purchasing of ingredients include the following, as listed by Mr. Campbell:

—Liaison between purchasing, the mill and all departments on purchasing procedure and other general matters.

—Assembles data on cost, supply, savings to customer, savings to mill, etc., on new ingredients requiring capital expenditure.

—Initiates and assists nutritional department in economic changes in formulation.

—Initiates and assists nutritional department in developing new ingredients and new source of nutrients.

—Reports market conditions and current values on all ingredients.

—Reviews traffic reports on demurrage for supply efficiency.

—Reviews quality control and laboratory reports and evaluates other values and service data to establish preference on sources of supply.

—Maintains an ingredient supply report projecting inventory, on track, enroute, due out and positions into estimated production days for all ingredients.

What He Should Know

In order to efficiently be able to accomplish these duties to the best advantage for his company, the purchasing agent, in the opinion of Mr. Campbell, must have a thorough knowledge of:

Agricultural economics and government programs; supply and demand factors on all ingredients; company purchasing policy and procedure, quality control policy, inventory control policy and procedure; all mill equipment and facilities as to unloading, storing, handling and use of ingredients.

In addition, Mr. Campbell said, the agent must have a working knowledge of: Over-all company policy, department policy and procedures, and personnel performance in nutritional, quality control, and inventory control departments.

And a general knowledge of: Domestic and international economics and political conditions; substitute and new ingredients not now being used, and personnel performance in all departments and the mill.

Mr. Campbell noted that a feed company's purchasing department has an important objective: "To supply the mill the right amount at the right time of the best all around values of nutrients, medications and packaging that are approved by the nutritional department to meet the scientific and practical requirements of their formulas, as buyers for the ultimate consumer of their products."

Canadian Feed Firm Publishes Booklet

TORONTO—The Pioneer-Cafeteria Feed division of Maple Leaf Milling Co., Ltd., has just published a booklet entitled "Pork" which claims that successful hog production today depends on following a six point "formula of objectives."

The first objective, say the Pioneer-Cafeteria Feed people, is to average "35 lb. total weight per litter at birth." Second objective is to average "450 lb. total weight per litter at eight weeks old." The third listed objective is to average "2,000 lb. per litter before six months old."

Fourth objective is "seven litters per sow in three years." The fifth objective is "1 lb. live gain per 3 lb. of feed consumed." Final objective is "75% of market hogs in the A-grade."

The feed company admits that at first glance, some of these objectives may seem to be beyond the reach of the average hog producer, but the booklet goes on to outline a program of breeding, feeding, housing and health which it claims will bring all six objectives within reach of all producers.

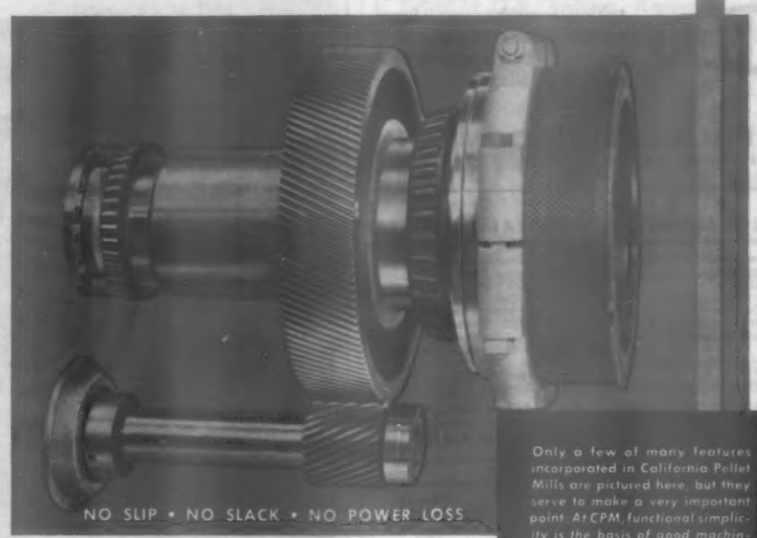
'BIRD DOG' CAPTURES 15% OF HOT DOG MARKET

A new chicken product test marketed at Ithaca, N.Y., under the separate names of "chicken frankfurters" and "bird dogs" captured 15% of the hot dog market, reports Dr. Robert Baker of the Cornell University Poultry husbandry department. A publication of the Pacific Dairy & Poultry Assn., quotes Dr. Baker as saying, "This hot dog does not taste like chicken. If it did, it would compete with chicken, and that is not what we want."

YOU GET

BALANCED PERFORMANCE

Only with CPM time-engineered features designed and built to do your pelleting job better, at lower cost



Only a few of many features incorporated in California Pellet Mills are pictured here, but they serve to make a very important point. At CPM, functional simplicity is the basis of good machinery design. Equipment is never just quickly added or changed simply to be "first" or different.

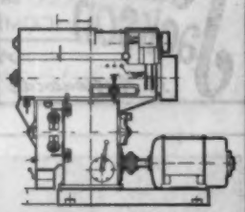
Take our FULL POWER GEAR TRAIN DRIVE for instance. Belt drives have been around for generations, but modern power machinery practice clearly endorses direct gear drive as the surest, long-lasting power transfer system. Why does CPM build pellet mills with solid gear train drive when others adopt one belt system or another? The answer: *Basic engineering experience dictates this better, more costly system, and CPM sales volume makes it practical.* Another example: CPM's careful matching of dies, motor size and gearing for specific pelleting jobs — not just "jumping horsepower" to claim higher pelleting output.

The guiding concept behind CPM engineering for every size pellet mill is simplicity and long service life. The result: Time saved for you; pellets at the lowest cost per ton; machinery that's young after years of use. Call your man from CPM today!

Direct Thrust Dies
Developed by CPM; angle allows more material to be forced through easier and faster.

Easy Access Lubrication
No need to shut down with CPM's time-saving full-protection lubrication system.

High-Capacity Mixer
Two-in-one design affords molasses mixing or conventional operation. Saves space. Saves on binning requirements.



Compact, Space-Saving Design
Integrally mounted on welded steel base. Less vibration; more pellets per square foot of machine.

Precision-Quick Roll Adjustment
The accessibility, ease and speed of CPM die change or roll adjustment is the industry standard for comparison. Aids die life, too.

CPM Commercial Pellet Mills — CALIFORNIA PELLET MILLS

CALIFORNIA PELLET MILL COMPANY
1800 Folsom Street, San Francisco 3, California
1114 E. Wabash Avenue, Crawfordsville, Indiana
101 East 15th Avenue, North Kansas City 16, Missouri

Sales & Service Representatives also in: Aberdeen . Albany . Atlanta . Columbus . Davenport . Denver . Fort Worth . Los Angeles . Mexico City . Minneapolis . Nashville . Oklahoma City . Omaha . Richmond . Seattle . St. Louis . Toronto . Winnipeg. Also manufactured, sold and serviced by Henry Simon Ltd., Stockport, England and Sydney, Australia

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PROCESSORS SINCE 1933
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Use FEEDSTUFFS Want Ads for RESULTS

Livestock really "live-it-up"

when you feed Dex-Mo-Lass

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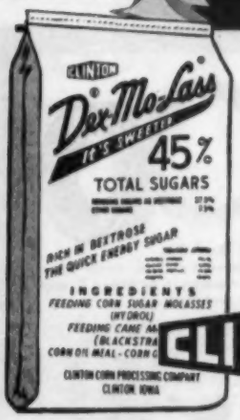

MOLASSES-RICH—made from highly nutritious ingredients: Feeding Corn Sugar Molasses (Hydrol), Feeding Cane Molasses (Blackstrap), Corn Oil Meal, and Corn Gluten Meal. BONE-DRY—flows freely in hottest or coldest weather. Packed in 50-lb. moisture-resistant bags. SUGAR-SWEET—makes any animal ration more palatable; steps up feed and water consumption for bigger gains. DOUBLY-USEFUL—highly nutritious in rations for all farm animals; scientifically formulated to preserve the quality of silage.

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FEED INGREDIENTS WITH *REAL* BENEFITS!

- MC-47 (Condensed Beet Solubles)
- MC-59 (Ammoniated Condensed Beet Solubles)
- TORAFEED (Torula Yeast)
- ADY-20 (Live Yeast)
- SCHLITZ Brewers Grains & Yeast
- FEEDPHOS (Defluorinated Phosphate)
- C.F.S. (Corn Fermentation Solubles)
- CLINTON Corn Gluten Meal-Feed
- HaVeN Granite Grit
- TAPO Oyster Shell & Meal
- KELL PHOS (Colloidal Phosphate)
- AVOSET Condensed Whey Solubles and Milk Albumin Product
- MILEZYMES (Takamine Feed Enzymes)
- Grains - Millfeeds - Grain By-Products
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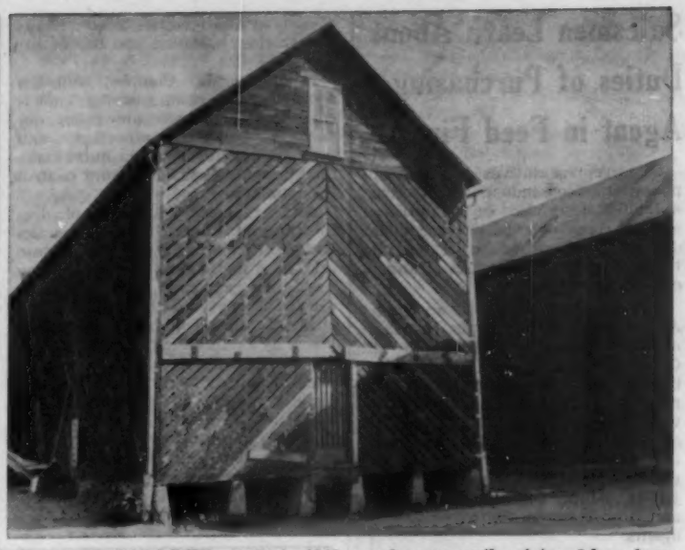

130,000-BU. CAPACITY—Built in 1910, wooden corn cribs pictured here have combined corn capacity of 130,000 bu. These corn cribs are believed to be the largest in the world.

FEED MILL

(Continued from page 29)

ers on the premises. The firm receives, uses and ships much grain each year. Livestock lease tenants do not pay special charges for grain storage or grain drying, reports Mr. Slocum, but other customers do.

The Sibley grain elevators, located near the feed mill, have a storage capacity of 130,000 bu.

80 Ton Capacity

Capacity of the mill is 80 tons per eight hour day, states Mr. Slocum. A large portion of the present volume is in bulk feed. Some bag and bulk is also delivered direct to customers from the Master Mix plant at Gibson City. Sibley Complete Feed Service

MERCHANDISE DISPLAY—Attractive merchandise display at Sibley Complete Feed Service mill means additional profits. Many extra sales—poultry and livestock remedies, farm tools, etc.—are made when customers drop in for a chat or to pay bills.

Superior Stability of Hetrogen

Data accumulated during years of continuous study confirm the superior stability of Hetrogen K Premix. Hetrogen K Premix is available in a full range of potencies on stabilized calcite or soy bean meal carriers. Stabilized corn meal or wheat middlings carriers* also available if desired.

Let us give you all the facts and research data about Hetrogen K

5,000 LB. CAPACITY—Hopper scales at Manager Slocum's left have 5,000 lb. capacity.

allows a $4 per ton bulk discount on concentrate or complete feeds.

"Many hogs are raised in this area and we find that by keeping large stocks of our four registered hog feeds on hand, we can sell and deliver considerable tonnage," reports Mr. Slocum. "While our mill is set up to serve principally the feeder on our grain bank plan, we will do special custom work for other farmers. However, since we have opened for business, quite a few non-tenant farmers are switching to our registered hog feeds. They like the quality

FEED PLANT'S HAMMERMILL—Bryant hammermill is located in basement at the Sibley Complete Feed Service headquarters.

and the price of the feeds, and the ease with which they can get them."

Mr. Slocum reports that many non-tenant farmers call for their feeds.

At the north side of the mill there is an electrically heated 40 x 32 ft. office and salesroom. In this modern office and store there are some excellent wall displays and price boards. Mr. Slocum states that many extra sales of poultry and livestock remedies, farm tools, etc., are made when customers drop in for a chat or to pay feed bills.

For advertising, Mr. Slocum uses the regular Master Mix newsletter which he sends to about 250 customers. He also mails out special hog feed letters and these bring good results. When Mr. Slocum publishes an effective newspaper ad, he often has reprints made on stiff cards and then mails these to his customers. By getting reprints, he saves the cost of setting type for the direct mail. When writing his ads, he keeps the dual purpose of the copy in mind. This also governs the size of the newspaper ad, he states.

Feeds in Connecticut Meet Most Claims

NEW HAVEN, CONN.—Feeds offered for sale to Connecticut dairymen and poultrymen in 1959 fell only 5% short of meeting all guaranties made by the manufacturers, the Connecticut Agricultural Experiment Station reports.

The number of brands of commercial feeding stuffs registered by 192 firms in 1959 was 1,463, a decrease of 155 compared with 1958.

Dr. H. J. Fisher, chief of the analytical chemistry laboratory at the station, says that more than 2,300 individual guaranties were made on components of the 727 official samples taken from stocks of feed stores during the year.

Ninety-six of these samples did not meet all guaranties made for them.

Of the guaranties not met, the largest number were due to fat content found on analysis to be below that claimed by the manufacturer. Protein content below the guaranty and deficiencies in medicants accounted for most of the other failures to meet label claims, Dr. Fisher reports.

Sixty-four samples of vitamin supplements were examined. Fifty of these, or 78%, met their guaranties for all declared vitamins. Only one deficiency in vitamin D was found.

State law provides that the station collect samples of feeding stuffs registered for sale in Connecticut, examine the samples, and publish the results of inspection. Copies of the report for 1959, Bulletin 633, are now available from the station. Address requests to Publications, Box 106, New Haven 4.

GRAIN BELT RAPID-WEIGH Portable Bulk Scale

★ BETTER ★ FASTER ★ EASIER ★

—SPECIFICATIONS—

Width	30"
Overall Height	58"
Hopper Height	41½"
Height at Front	37"
Length of Hopper	46"

Positive Wheel Brake
1000-lb. Full Capacity Beam Scale
2—10" x 2½" Molded on Rubber Wheels
2—6" Swivel Casters
Manufactured of 14-Gauge Steel With 12-Gauge Bottom

RAPID-WEIGH PORTABLE BULK SCALE

Dumps Through 8"x13" Gate Just Ahead of Axle

Holds Approximately 16 Cubic Feet or
800 Lbs. Shelled Corn
500 Lbs. Pulverized Oats
630 Lbs. Average Material

Price, F.O.B. Salina, Kansas $295.00

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K Premix* Confirmed!

Premix—the vitamin K supplement in which the potency in the bag matches the potency on the tag.

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☐ Yes, I want data on Hetrogen K.
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MOST PRACTICAL DESIGN

B&L Mobiles have been designed to provide maximum efficiency in a powerful "tool" for merchandising concentrates and complete mixed feeds.

ONE-MAN OPERATION

Ease of handling plus an enclosed feed transport compartment eliminates need for a helper, even at a very profitable rate of production.

EXCLUSIVE MIX-A-METER

This calibrated indicator measures feed ingredients and shows operator and customer that feed is being correctly formulated.

BALED HAY FEEDER

The baled feed table handles whole bales (square or round) at rates of up to 200 per hour.

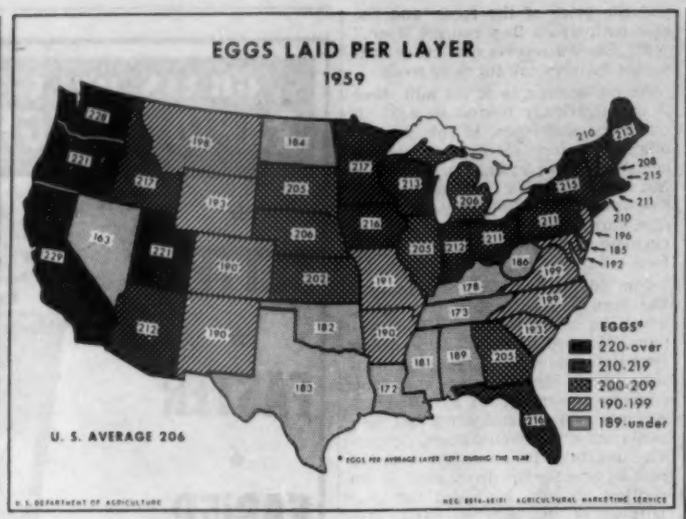
Send for details today!

ONE MAN -- ONE POWER UNIT GAS or DIESEL*

*Optional equipment includes corn sheller and air unloader.

BARNARD & LEAS Manufacturing Company INC.

1309 Twelfth Street S.W. Cedar Rapids, Iowa



USDA Cites Gains in Rate of Lay

WASHINGTON—The laying flock on hand next Jan. 1 will be the smallest since records were begun in 1925, according to a report from the U.S. Department of Agriculture. In addition, the average number of layers on hand this year is the smallest recorded to date.

Even so, according to the report, the 1960 egg production will be the second or third largest ever recorded. It is below that of 1959, and could fall below the level reached in 1956.

The explanation, of course, is the increased rate of lay per bird. The average layer of 1960 will probably lay an egg or two more than the 206 her predecessor laid in 1959. And the 1959 average bird laid 32 more eggs than her predecessor laid in 1950, 72 more than in 1940 and 94 more than in 1925.

The average increase since 1925 has been equivalent to 2.7 eggs per year per chicken, or 1.7% per year. In the past 10 years, the average increase has risen to 3.6 eggs per year, equivalent to 19% annual increase.

The changes in rate of lay show both seasonal and geographic differences. Also, areas with the more specialized egg production enterprises have higher-than-average rates of egg production per bird (see the two charts accompanying this article).

Seasonal Change

Seasonally, most of the increase in rate of lay in the past 20 years has come in October-January. Rates for those months in the early 1940's were typically only 30 to 40% of the comparable rates for the flush production months of April and May.

Now the rates for October-January are about 85% of those for April and May. Flock size now is relatively larger in the fall than it used to be, too, with the result that total egg production at that season is now closer to springtime production.

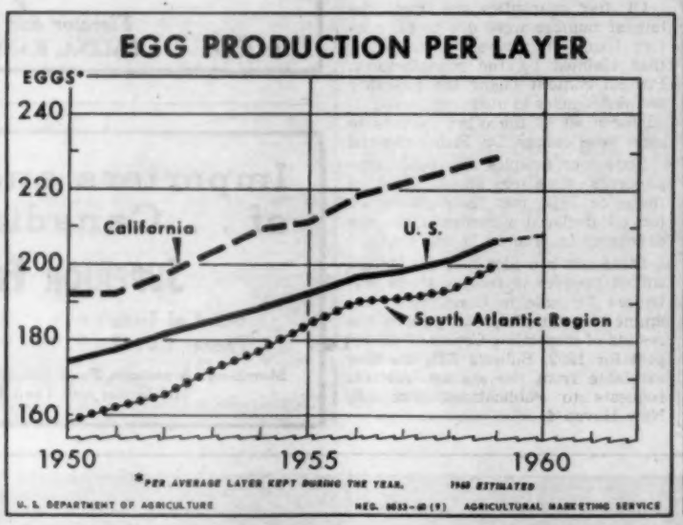
While this seasonal change has been progressing, geographic change also has been going on. Commercial egg production is moving into new states, particularly in the Southeast, and the large commercial enterprise is becoming more important in other states where it had been established earlier.

The degree of commercialization is an important factor in the state differences. Generally speaking, the commercial flocks are most prominent in the Northeast, on the Pacific Coast, and in Utah.

As specialization proceeds, commercial flocks with high rates of lay displace farm flocks with lower rates. Therefore, rates of production for the lower states can be expected to move upward toward those of more specialized states.

As a minimum, U.S. average rates could be expected to continue to move upward toward the levels of the leading states. But as a matter of fact, these states average figures —such as 229 eggs per average layer in California—are short of the goal of 240 per hen housed which is sought by many practical poultrymen, so the nation's ceiling is still some distance from the current achievement.

And by the time the current "ceiling" is attained, it is likely that a new ceiling will have emerged, providing the opportunity for an even higher practical level for egg production per layer, concludes the report.



Poultry Plant Closes

SNOW HILL, MD.—The Maryland Poultry Processors, Inc., poultry processing plant has been offered for sale or lease. The plant closed Nov. 4.

Louis W. Shockley, vice chairman of the board of directors, said the plant would not be put up at auction, at any rate not in the near future.

The official for the poultry firm said, "The farm price here has been considerably higher than the farm price in North Carolina and Georgia. It was 14¢ to 14½¢ in those areas recently while our prices here rose to 17 and 18¢."

A spokesman indicated that the plant's closing will have little if any effect on the broiler industry here. Several plants are not operating at full capacity. There are adequate processing facilities in Delmarva.

DIRECTOR NAMED

DARDANELLE, ARK.—Efton A. Stanfield, formerly of Nacogdoches, Texas, has been named personnel director for Arkansas Valley Industries, Inc., at Dardanelle, Harold Snyder, AVI president, announced. Mr. Stanfield will direct all phases of personnel management for AVI and its subsidiaries, Mr. Snyder said. AVI is an integrated producer and processor of poultry and feed.

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Your Sheep need Phenothiazine for Internal Parasite Control Feed 'em Green'salt 10% Pheno.
BUY STERLING BRINE BUTTONS for your Water Softener here!
FEED THE DEER SALT 95¢
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and STERLING SALT products build traffic!

(Sell the winter line)

Sterling Halite Ice Melting Crystals—in demand all winter long. Every storm brings a rush of customers for Halite Melting Crystals to remove dangerous, slippery ice from steps, driveways, loading docks, etc. Halite Melting Crystals are colorfully packaged in 10-lb. bags for hand sprinkling, 25-lb. bags with a convenient carrying handle, or 100-lb. bags for the large-user. Display this profit-maker, establish your store as the place to get Halite in an emergency!

Sterling Water Softener Salt—A Sale-a-month. Here's a steady money-maker that brings people to your store regularly. It creates the opportunity for you to sell these people other products. City and country home, farm, industrial and institutional business is available to you. And Sterling is the really complete line of water softener salt for all units. Promote Sterling Water Softener Salt. 50- and 100-lb. bags of Sterling Rock Salt or the all-purpose Sterling Brine Buttons are real profit-makers.

Sterling Blusalt and Sterling Granulated Salt for grist mixes and free choice feeding—in bags or blocks—are steady profit-makers all year 'round. Blusalt contains salt plus iron, manganese, sulfate sulfur, iodine, copper, cobalt, zinc—all essential for more meat and milk production. And if you're mixing feed, there's a Sterling trace mineral mixing salt specifically designed to meet your needs. For farm flocks of sheep, offer Sterling Green'salt—trace mineral salt plus 10% pheno.

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Clarks Summit, Pennsylvania

Service & Research are the extras in STERLING FARM & FEED SALT

NEW
IMPROVED
SAME LOW PRICE

RYDE'S NUTRITIVE MINERALS

FOR HOGS, POULTRY, CATTLE

Contains cooked and ground egg shells with egg albumen, and all known essential trace mineral elements.

HELPS TO: *Make all feed go farther*

- *Improve general health and appearance*
- *Increase resistance to disease*
- *Improve production*

For Self Feeding — Custom and Formula Mixing

RYDE & CO., 3939 So. Union Ave., Chicago 9

Research Laboratory To Open in Maryland

BERLIN, MD.—A new laboratory for research, development, testing and production of animal health vaccines will go into operation here. The laboratory is being built and will be operated by L & M Laboratories, Inc., Selbyville, Del., according to E. B. Murray, corporation president.

G. S. Appleton

L&M itself was formerly known as L&M Distributors, handler of poultry and dairy supplies, and engaged in field vaccinating, debeaking and diagnostic work for its customers at Selbyville since 1954. It now enters the research and manufacturing field with the addition of three poultry and animal health scientists as officers and members of the new firm.

Dr. S. B. Hitchner Dr. R. W. Winterfield

They include Dr. Stephen B. Hitchner and Dr. Roland W. Winterfield, veterinary pathologists, and George S. Appleton, bacteriologist.

Dr. Hitchner will be director of research at the new Berlin laboratory. Mr. Appleton will be director of production there. Dr. Winterfield will be director of field service and diagnostic work of the company and will also be responsible for handling certain research projects.

All three men formerly were associated with the American Scientific Laboratories, Inc., Madison, Wis. Dr. Hitchner was director of that firm's department of preventive medicine for both poultry and large and small animal projects. Dr. Winterfield was head of the virus research section while Mr. Appleton was manager of the animal health production division.

August Fish Meal Total Up, But Season's Down

WASHINGTON — Production of 50,000 tons of fish meal and scrap in the U.S. during August amounted to an increase of 3% over the same month a year earlier, the U.S. Department of the Interior reports.

This increase, however, was not enough to offset lower production in other months during the first eight months of 1960. The department says the 180,000 tons of fish meal and scrap produced during the eight-month period was 13,000 tons below the same period of 1959.

Menhaden meal output of 45,000 tons made up 90% of the August total.

Oregon Parties Set

PORTLAND, ORE.—Dates for two annual Christmas parties, staged by statewide districts of the Oregon Feed & Seed Dealers Assn., have been set.

Initial party will be given by Gov. Don Patterson and the Southern Oregon district Dec. 8 at the Rogue Valley Country Club, Medford.

The Washington County district will stage its annual Yule Fete Dec. 13 at the Forest Hills Golf Club, Cornelius.

Arrangements are currently under way for scheduling the combined Eugene-Albany district event to correspond with the already confirmed dates.

A Major Breakthrough in Moisture Testing

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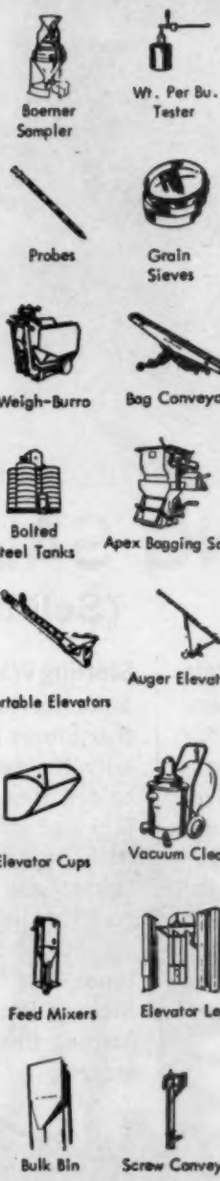

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FEEDSTUFFS WANT ADS

DRIVEWAY—Bulk trucks are loaded in the driveway from overhead bins by an operator using rack and pinion valves and looking through the window into the office for the weight reading on the 50-ton truck scale.

NEW PLANT

(Continued from page 20)

in design, yet does not require extensive vertical space.

Pellets move from the inclined conveyor onto a Strong-Scott reciprocating sifter which separates the fines. They are then elevated back into the mash bins over the pellet mill by the 20 h.p. fan on the cooler.

The Tarkio plant does not have a crumble roll at this time, but it can be added later just ahead of the sifter.

LOADING OUT OR PACKING—Most of the Tarkio production goes out in bulk. There are ten 20-ton load-out bins located over the driveway, and the 50-ton truck scale. A truck is loaded out by an operator working rack and pinion valves from the driveway, watching the scale dial through the office window.

When the feed is sacked, it goes into a bin that spouts into the warehouse area where it is packed off through a Winborn packer equipped with an automatic scale and a sewing head. One or two operators can handle the packing, depending upon what capacity is desired.

Sacks are loaded onto pallets and moved by a Yale fork lift truck to the adjacent 50-ft. by 80-ft. Behlen steel building which has a 10-ft. by 24-ft. loading dock.

Operated by Four Men

The mill is designed to be operated by four men—one man handling the receiving and bulk load-out, one man handling the hay grinding and warehousing, and two men inside the mill handling the grinding, mixing and pelleting.

Manager of the plant is Robert F. Hessell. The corporation's officers and directors are: George W. Knepper, president; O. C. Swackhammer, vice president; Stanley Irvine, secretary; Dean Watson, treasurer; Donald Hurst; R. S. Irvine; Max Van Hoozer; L. D. Knepper; Leland Graves; Melvin Rolf; Clark Rhoden; James Low, and Frank McDermand. Mr. McDermand and Mr. Rhoden are from Kansas City; Mr. Graves is from St. Joseph; Mr. Rolf from Rock Port, Mo. The rest of the men are from Tarkio.

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October and Seasonal Dehy Production Up

KANSAS CITY—Both October and cumulative production of dehydrated alfalfa this year show gains over 1959, according to survey results reported by the American Dehydrators Assn.

The seasonal increase, Jan. 1 to Oct. 31, amounts to about 4%—from 814,854 tons in 1959 to 849,433 tons in 1960. The October gain was about 5½%—from 61,257 tons to 64,719 tons.

Although Jan. 1-Oct. 31 production of dehy grew from 664,983 tons last year to 679,889 tons this year in states between the Rocky Mountains and the Mississippi River, production in Nebraska, which accounts for more than a third of total output, dropped from 379,831 tons to 374,768 tons during the same period. Kansas, No. 2 state in dehy output, increased its Jan. 1-Oct. 31 dehy production from 106,444 tons to 119,964 tons.

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And the offspring! When mated with proven males, Arbor Acres 50's produce broiler chicks that grow and convert better than the Arbor Acres crosses which have set the industry standard for years. The fleshing and dressing characteristics of "50" crosses are already winning over well-known processors. Arbor Acres spent five years developing the "50" because we knew you couldn't afford to use any pullet but the best. Now it seems as if everybody wants to put in "50's" at the same time! Better call your Arbor Acres Division right away to be sure of the dates you want.

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FEEDSTUFFS
A WEEKLY NEWSPAPER
For the Feed Manufacturer, Feed Jobber
Feed Broker and Feed Dealer

Monthly Index
October, 1960
Volume 32 Numbers 40-44

ADDITIVES:
Vermont Feed Convention ....Oct. 8—p 1
Weather Hazards Studied ....Oct. 15—p 1

ADVERTISING:
News Angle Makes Advertising Interesting ....Oct. 29—p 44
Survey Shows What Percentage of Sales Is Put in Ad Budgets ....Oct. 15—p 84
Tips on How to Plan, Budget Advertising ....Oct. 22—p 78

ALFALFA:
Animal Fat Tested as Energy Source in Alfalfa Pellets..Oct. 22—p 48
Harvest, Storage Affect Feed Value of Alfalfa....Oct. 22—p 68
More Dehy Plant Shutdowns Seen ....Oct. 15—p 8
Production of Dehy Up From Last Year ....Oct. 22—p 4
Putting Research to Work ....Oct. 22—p 18; Oct. 29—p 38

AMINO ACIDS:
Annual Swine Day (Missouri) ....Oct. 8—p 78
Arkansas Formula Feed Conference ....Oct. 29—p 20
New Chemical Nutrient Mixtures 'Triple Growth Rate' of Chicks in Illinois Tests ....Oct. 29—p 8
Putting Research to Work ....Oct. 29—p 38
Texas Nutrition Conference ....Oct. 15—p 6

ANIMAL BY-PRODUCTS:
Production of Tankage, Meat Meal Increases ....Oct. 1—p 20
Use of Blood Meal for Poults Feasible ....Oct. 15—p 46

ANTIBIOTICS:
AFMA Describes Implications of Antibiotic Ruling ...Oct. 29—p 4
Annual Swine Day (Missouri) ....Oct. 8—p 78
Cattle Feeders Day ....Oct. 29—p 12
Florida Swine Day ....Oct. 22—p 62
Minnesota Beef-Grassland Field Day ....Oct. 8—p 14
Oral Antibiotic Shows Promise for Arresting Turkey 'Hock Disease' ....Oct. 22—p 1
Texas Nutrition Conference ....Oct. 15—p 6

ARSENICALS:
Arsenicals, Selenium in Feeds Attacked ....Oct. 22—p 107

ASSOCIATIONS:
American Dehydrators Assn. (Oppose Increase R.R. Rates) ....Oct. 22—p 8
American Feed Mfrs. Assn. (Appointment) ....Oct. 8—p 4
(Gathering Farm Mixing Data) ....Oct. 15—p 6
(Industry Committee, FDA Group to Meet) ....Oct. 29—p 1
(Public Relations Activities) ....Oct. 22—p 1
(Sales Executives Council Appointment) ....Oct. 1—p 4
(Sales Managers Explain How Salesmen Are Paid)...Oct. 8—p 8
(Soy Meal Guides) ....Oct. 8—p 61
Animal Health Institute (1961 Animal Health Month Changed) ....Oct. 22—p 36
Animal Nutrition Research Council (Appointment) ....Oct. 15—p 4
Arkansas Feed Manufacturers Assn. (Officers) ....Oct. 8—p 100
Association of American Feed Control Officials (Appointment) ....Oct. 15—p 4
(Convention) ....Oct. 15—p 1
(Definition Changes Okayed) ....Oct. 15—p 1
(Efforts to Change Molasses Definition) ....Oct. 1—p 7
(Urges Acceptance of Responsibilities) ....Oct. 15—p 1
Association of Official Agri. Chemists (Meeting, Officers) ....Oct. 22—p 44
Canadian Feed Manufacturers National Assn. (Fall Meeting) ....Oct. 22—p 65
(New Constitution Adopted) ....Oct. 8—p 32
Feed Production School (Planning 1961 School) ....Oct. 15—p 7
Georgia Feed Dealers Assn. (Poultry Feeding Standards) ....Oct. 29—p 84
Grain & Feed Dealers National Assn. (Appointment)...Oct. 1—p 7
(Rate Increase Protests) ....Oct. 22—p 8
Illinois State Turkey Growers Assn. (Meeting) ....Oct. 22—p 36
Indiana Grain & Feed Dealers Assn. (Secretary) ....Oct. 15—p 24
Midwest Feed Manufacturers Assn. (Board of Directors Meeting) ....Oct. 8—p 4
(Explains Rail Rate) ....Oct. 1—p 62
(Oppose Increase in R.R. Rates) ....Oct. 22—p 8
National Broiler Council (Appointment) ....Oct. 1—pp 7 & 20
(Point-of-Sale Posters) ....Oct. 22—p 24
Northeastern Poultry Producers Council (Convention) ....Oct. 15—p 1; Oct. 22—p 6
Northwest Feed Manufacturers Assn. (Committees)...Oct. 22—p 74
Ohio Grain & Feed Dealers Assn. (Planning Session)...Oct. 15—p 16
Pennsylvania Millers & Feed Dealers Assn. (Convention) ....Oct. 1—p 1; Oct. 15—p 61
Poultry & Egg National Board (Facts on Eggs) ....Oct. 8—p 10
Poultry Industries of Louisiana, Inc. (Convention)....Oct. 29—p 60
Vermont Feed Dealers & Mfrs. Assn. (Meeting) ....Oct. 8—p 1

AUTHORS:
Baird, Dr. D. M.; McCampbell, H. C.
Waste Fats in Finishing Rations for Drylot Hogs....Oct. 8—p 86
Bergman, R. E.
New Developments and Problems in Feed Controls...Oct. 29—p 78
Bisly, Jacob; Gasperdone, H.; Pope, W. H.; Bray, D. F.
Fishy Eggs ....Oct. 1—p 34
Blair, Jess
Bulk Stations and Farm Store Prove Good Investments.Oct. 29—p 34
New Push-Button Feed Mill in Operation in Texas....Oct. 29—p 26
Oregon Firm Builds Sales With Slant to Big Cattle Ranchers ....Oct. 15—p 60
Bolin, D. W.; Buchanan, M. L.; Dinusson, W. E.; Erickson, D. O.
North Dakota Cattle Feeding Research ....Oct. 1—p 26
Bray, D. F. (See Bisly, Jacob)
Buchanan, M. L. (See Bolin, D. W.)
Brown, Robert H.
Broiler Production Shifting From Contracts to Salaries ....Oct. 8—p 66
Combs, Dr. G. F.; Heibacka, Dr. N. V.
Calcium Needs for Laying Chickens ....Oct. 1—p 32
D'Armi, Frank; Lloyd, Ray
The Relationship of Numbers of Feeders to the Growth and Feed Efficiency of Broilers ....Oct. 22—p 38
Dinusson, Dr. W. E.
Barley for Hogs—A Decade of Research ....Oct. 15—p 28
(See Bolin, D. W.) ....Oct. 1—p 26
Erickson, D. O. (See Bolin, D. W.)
Gasperdone, H. (See Bisly, Jacob)
Halloran, Hobart R.
Vitamin A Liver Storage in Pullets and Hens....Oct. 15—p 18
Heibacka, Dr. N. V. (See Combs, Dr. G. F.)
Lloyd, Ray (See D'Armi, Frank)
McCampbell, H. C. (See Baird, Dr. D. M.)
Morris, H. B.
Organizing & Operating a Sales Training Department.Oct. 1—p 14
Nelson, Al P.
Iowa Firm Builds New Mill, Features Special Services..Oct. 29—p 62
Market Survey Helps Establish Feed Mill in Illinois..Oct. 15—p 44
News Angle Helps Make Advertising Copy Interesting ....Oct. 29—p 44
'Satellite' Blending Plant Exemplifies Industry Trend in Distribution Efficiency ....Oct. 1—p 42
Should the Feed Man Exhibit at Fairs? ....Oct. 1—p 70
Survey Shows What Percentage of Sales Is Put in Ad Budgets ....Oct. 15—p 84
Wisconsin Feed Man Raises 300,000 Broilers Annually ....Oct. 29—p 26
Pope, W. H (See Bisly, Jacob)
Rohlf, Marvin E.
Microingredient Problems in Feed ....Oct. 29—p 15
Stratton, Charles L.
Trend Toward More Feed Milling in Integrated Bird Operations ....Oct. 8—p 70
Tamashunas, Victor M.
Industrial Engineering Analysis of Custom Feed Mill Activities ....Oct. 29—p 18
Thomas, Dr. O. O.
All-Concentrate Rations to Fatten Cattle Discussed at Feeders Day at Montana ....Oct. 29—p 12
Thompson, Ray
Mississippi Poultry Unit Is Completely Integrated...Oct. 29—p 10
Totten, James C.
Changes, Trends in Production of Eggs Discussed at Michigan Hatchery Meeting ....Oct. 22—p 32
Whitehair, Dr. C. K.
Disease and Nutrition of Large Animals....Oct. 22—p 46

BARLEY:
Barley for Hogs—A Decade of Research ....Oct. 15—p 28
Cattle Feeders Day—Montana State College ....Oct. 29—p 13
North Dakota Cattle Feeding Research ....Oct. 1—p 26

CANADA:
Effects of Canadian Ag Post Change Noted ....Oct. 29—p 48
Expects Slight Feed Shipment Rise ....Oct. 22—p 100
Grub Chemicals Approved in Canada ....Oct. 15—p 40
Has Same Support Price for Eggs ....Oct. 15—p 39
Hog Numbers Down 20% in Canada ....Oct. 15—p 62

CATTLE FEEDING:
Arkansas Formula Feed Conference ....Oct. 8—p 100; Oct. 29—p 20
California Animal Ind. Conference ....Oct. 29—p 6
Cattle Feeders Day—Montana State College....Oct. 29—p 12
Comparing Hay Fed in Various Forms to Weanling Calves ....Oct. 22—p 20
Minnesota Beef-Grassland Field Day ....Oct. 29—p 50
North Dakota Cattle Feeding Research ....Oct. 1—p 26
Texas Nutrition Conference ....Oct. 22—p 11
Texas Study Shows How Ruminants Digest Carbohydrates ....Oct. 15—p 95
Vegetable, Animal Fats Used to Add Energy to Beef Rations ....Oct. 8—p 30

CHEMOBIOTICS:
Cattle Feeders Day—Montana State College ....Oct. 29—p 12

COCCIDIOSTAT:
Merck Introduces New Coccidiostat ....Oct. 22—p 1

COMPANIES:
Albers Feed & Farm Supply (Bulk Station and Farm Store) ....Oct. 29—p 34
American Cyanamid Co. (Appointments) ....Oct. 8—p 6; Oct. 15—p 16; Oct. 22—p 61; Oct. 29—p 83
Allied Mills, Inc. (Financial Report) ....Oct. 8—p 99
Archer-Daniels-Midland Co. (Buys J & O Grain Co.)...Oct. 1—p 92
Arkansas Egg Farm, Inc. (Begins Operation) ....Oct. 15—p 14
Arkansas Grain Corp. (New Soybean Plant) ....Oct. 8—p 61; Oct. 15—p 7
Arkansas Valley Industries, Inc. (Dividend) ....Oct. 8—p 98; Oct. 22—p 4
Armo Mills, Inc. (Push-Button Mill) ....Oct. 29—p 26
Barker Poultry Equipment Co. (Sold to Waterman Pan Co.) ....Oct. 8—p 62
Bartlett & Co. (Buys Topeka Feed Operation) ....Oct. 29—p 1
(Expands in Missouri) ....Oct. 22—p 101
Bell Grain & Milling Corp. (Promotion) ....Oct. 15—p 82
Bemis Bro. Bag Co. (Appointment) ....Oct. 1—p 76
Birdseye Flour & Feed Mills (Promotions) ....Oct. 22—p 39
Blatchford Calf Meal Co. (President Dies) ....Oct. 8—p 1
Boston Feed Supply (Appointment) ....Oct. 15—p 74
Bowman Feed Products, Inc. (Named Distributor) ....Oct. 8—p 6
Burrus Flour Mills (Cuba Mill Nationalized) ....Oct. 29—p 4
Butler Mfg. Co. (Film) ....Oct. 1—p 11
Canada Packers, Ltd. (New Livestock Feed) ....Oct. 29—p 48
Cargill, Inc. (To Sell North Dakota Salt) ....Oct. 15—p 90
Central Soya Co. (Financial Report) ....Oct. 29—p 1
Checkerboard Grain Co. (Retirement) ....Oct. 22—p 99
Chemell Hatcheries (Creditors Meet) ...Oct. 1—p 8; Oct. 8—p 7
Clute, Francis H. (Patents New Fan) ....Oct. 15—p 23
Colorado Milling & Elev. Co. (Annual Meeting) ....Oct. 8—p 8
Commercial Solvents Corp. (Sales Report) ....Oct. 29—p 89
Continental Grain Co. (Kansas Office) ....Oct. 15—p 77
Cooper, O. A. (French Visitor) ....Oct. 8—p 32
Cudahy Packing Co. (Appointment) ....Oct. 29—p 4
Dairy Cooperative Assn. (Appointment) ....Oct. 22—p 72
Dakota Salt & Chemical Co. (Salt Plant Opens) ....Oct. 29—p 32
Davies, Wm., Co. (Swisher Division Feed School)....Oct. 15—p 48
Day Co. (Licenses British Manufacturer) ....Oct. 8—p 76
Delmarva Equipment Mfg. Co. (Inventions) ....Oct. 22—p 90
Doane Agricultural Service Co. (Appointment) ....Oct. 15—p 83
Dow Chemical Co. (Food Additive Order on Zoalene)..Oct. 8—p 4
Eagle Mills Co. (To Process Ingredients) ....Oct. 8—p 25
Farm Bureau Coop. Assn. (New Dog Food) ....Oct. 1—p 87
Farm Bureau Service Co. ....Oct. 29—p 49
Farmers Elevator Co. (New Mill) ....Oct. 29—p 62
Farmers Union Marketing Assn. (New Mill) ....Oct. 15—p 64
Grain States, Eastern Division, Inc. (Appointment)...Oct. 8—p 19
Forrest Farms (Complete Integration of Poultry Unit)..Oct. 29—p 10
Glenhaven Eggs, Inc. (To Handle 20 Million Eggs in 1960) ....Oct. 1—p 18
Glenny Bros. (Major Swine Operations) ....Oct. 8—p 18
Gooch Feed Mill Co. (Bulk Station) ....Oct. 15—p 38
Hand, Peter, Foundation, Inc. (Appointment) ....Oct. 1—p 87
Harvey & McKinney's Olympia Feed Co. (Bulk Installation) ....Oct. 22—p 42
Hazelton-Nuclear Science Corp. (Form Scientific Firm)..Oct. 29—p 64
Hess & Clark (Honors Top Poultrymen) ....Oct. 1—p 91
(Nitrofuran Symposium) ....Oct. 1—p 58
Hubbard Milling Co. (Staff Additions) ....Oct. 22—p 4
Hudson Pulp & Paper Corp. (Appt.)....Oct. 8—p 29; Oct. 15—p 62
International Minerals & Chemical Corp. (Buys Fertilizer Plants) ....Oct. 22—p 33
($12 Million Spent) ....Oct. 22—p 76
Interstate Livestock Feeder Cooperative (New Mill)....Oct. 15—p 91
J & O Grain Corp. (Sold to Archer-Daniels-Midland)..Oct. 1—p 92
Keen Mfg. Co. (Moves) ....Oct. 15—p 46
Kent Feeds, Inc. (Promotions) ....Oct. 15—p 8
Lindsey-Robinson & Co. (Liquidation) ....Oct. 8—p 44
Lipscomb Agricultural Supply Co. (Leases Firm) ....Oct. 15—p 12
Maple Leaf Milling Co., Ltd. (Fire) ....Oct. 15—p 1
Merck & Co., Inc. (Introduces Coccidiostat) ....Oct. 22—p 1
(Vitamin Product for Water) ....Oct. 22—p 74
(Staff Addition) ....Oct. 22—p 98
Mississippi Chemical Corp. (Builds Two Mills) ....Oct. 29—p 4
(Treasurer) ....Oct. 8—p 20
Modern Mills, Inc. (Open House) ....Oct. 8—p 75
Monsanto Chemical Co. (Appointment) ....Oct. 8—p 68
Morrell, John, & Co. (Appointment) ....Oct. 29—p 6
Murphy Products Co. (Appointment) ....Oct. 8—p 62
Myzon Laboratories (Promotion) ....Oct. 1—p 83
Naremco, Inc. (Appointment) ....Oct. 1—p 20
National Alfalfa Dehydrating & Mfg. Co. (Appt.)....Oct. 8—p 48
National Distillers & Chemical Corp. (Appt.) ....Oct. 15—p 64
Nittany Valley Feed & Grain Co. (New Mill) ....Oct. 22—p 99
Nopco Chemical Co. (Honors Chairman) ....Oct. 15—p 50
Nutrena Mills, Inc. (Appointment) ....Oct. 29—p 54
(Tennessee Egg Project) ....Oct. 15—p 1
Pay Way Feed Mills (Promotion) ....Oct. 15—p 65
Peavey, F. H., & Co. (Fryer Program) ....Oct. 8—p 8
(Importance of Service) ....Oct. 15—p 16
Peet, E. M., Mfg. Co. (New Quality Control Lab)....Oct. 22—p 76
Pfizer, Chas., & Co., Inc. (Films) ....Oct. 22—p 27
(Meat Judging Awards) ....Oct. 29—p 11
(New Laboratory) ....Oct. 15—p 90
(Promotions) ....Oct. 15—p 6

Phil-Co Feeds, Inc. (New Mill) ....Oct. 15—p 97
Prairie Feed & Grain Co. (Market Survey) ....Oct. 15—p 44
Ralston Purina Co. (Building Canadian Plant) ....Oct. 15—p 16
(Farm Tests) ....Oct. 15—p 24
(Forms German Feed Firm) ....Oct. 15—p 1
(Japanese Visitors) ....Oct. 29—p 8
(Staff Changes) ....Oct. 8—p 61
Rauh, E., & Sons Fertilizer Co. (Bought by IMC) ....Oct. 22—p 33
Red Hat Feeds (Appointment) ....Oct. 22—p 4
Salsbury's, Dr., Laboratories (New Branch Office) ....Oct. 8—p 52
(Poultry Short Course) ....Oct. 8—p 83
(Staff Additions) ....Oct. 8—p 98
Seco, Inc. (Appointment) ....Oct. 15—p 26
Sherwood Feed Mills (Sponsors Beef Event) ....Oct. 29—p 51
Smico Sales Co. (Appointment) ....Oct. 1—p 87
Smith-Douglass Co. (Financial Report) ....Oct. 15—p 74
Spencer Kellogg & Sons, Inc. (Appointment) ....Oct. 15—p 39
(Financial Report) ....Oct. 15—p 1
Staley, A. E., Mfg. Co. (Sales Meeting) ....Oct. 15—p 64
Stamper, F. M., Co. (Annual Auction) ....Oct. 15—p 34
Strong-Scott Mfg. Co. (Appointment) ..Oct. 15—p 39; Oct. 29—p 77
(Marketing Change) ....Oct. 8—p 107
Supersweet Feeds (New Iowa Plant) ....Oct. 22—p 4
Sutorbilt Corp. (Appointment) ....Oct. 29—p 76
Valley Mills (Fall Meeting) ....Oct. 8—p 98
Vantress, Charles, Farms, Inc. (Plans Breeding Farm) ....Oct. 15—p 71
Vick Chemical Co. (Drugs) ....Oct. 22—p 74
Victor Feeds (New Warehouse) ....Oct. 8—p 62
Viking Feeds, Inc. (Election) ....Oct. 29—p 89
Vineland Poultry Labs. (Appt.) ....Oct. 15—p 64; Oct. 29—p 83
Vy Lactos Laboratories, Inc. (Appt.) ....Oct. 1—p 8
Walnut Grove Products Co., Inc. (Swine Feeding Program) ....Oct. 15—p 97
Waterman, L. E., Pea Co., Ltd. (Buys Barker Poultry Equipment Co.) ....Oct. 8—p 62
West Virginia Pulp & Paper Co. (Appointment) ....Oct. 15—p 90
Western Farmers Assn. (New Plant) ....Oct. 15—p 61
Whitmoyer Laboratories, Inc. (Facilities in England) ....Oct. 15—p 46
Wilson, H. E., Co. (Appointment) ....Oct. 8—p 100
Womco Mills (Pelleted Livestock Feed) ....Oct. 8—p 26
Wooster Feed Mfg. Co. (Appointment) ....Oct. 8—p 92
Yoder Feeds, Inc. (Appointment) ....Oct. 22—p 88
(To Build) ....Oct. 1—p 42

CONDEMNATIONS:
Arkansas Formula Feed Conference ....Oct. 29—p 20
Broiler Condemnation Rate Rises in August ....Oct. 22—p 76
Condemnation Rate Calls for Improved Efficiency ....Oct. 22—p 7
Connecticut Poultry Meeting ....Oct. 15—p 90
Data Squelches Turkey Condemnation Rumors ....Oct. 29—p 1
Delmarva Regional Poultry Meeting ....Oct. 8—p 94
Georgia Poultry Institute ....Oct. 8—p 33
Georgia Poultry Condemnation Meeting ....Oct. 29—p 84
Poultry Industries of Louisiana, Inc., Convention ....Oct. 29—p 60
Progress Reported in Georgia Study ....Oct. 8—p 92
Virginia State Poultry Federation ....Oct. 29—p 54
Wisconsin's Turkey Producers Concerned Over Condemnations ....Oct. 29—p 13

CONFERENCES:
Arkansas Formula Feed Conference ....Oct. 8—p 100; Oct. 29—p 20
California Animal Industry Conference ....Oct. 29—pp 1 & 6
Connecticut Poultrymen's Conference ....Oct. 15—p 90
Delmarva Poultry Regional Meeting ....Oct. 8—p 94; Oct. 22—p 51
Feed Marketing Seminar ....Oct. 8—p 8
Feed Production School ....Oct. 1—pp 1, 8, 10, 11
Feed Service Conference ....Oct. 8—p 6
Florida Swine Day ....Oct. 22—p 62
International Congress of Nutrition ....Oct. 8—p 38
Minnesota Beef-Grassland Field Day ....Oct. 8—p 14; Oct. 29—p 50
Missouri Swine Day ....Oct. 8—p 78
Nebraska Feed & Nutrition Conference ..Oct. 8—p 1; Oct. 15—p 10
Symposium on Nitrofurans in Agriculture ....Oct. 1—p 52
Texas Nutrition Conference ....Oct. 15—p 6; Oct. 22—p 11

CONSTRUCTION:
Mauston Farmers Co-op. (Mauston, Wis.) ....Oct. 29—p 13
Mississippi Federated Cooperatives (Two Miss. Plants) ....Oct. 29—p 4
Montana Flour Mills Co. (Great Falls, Mont.) ....Oct. 8—p 10
Nutrena Mills (Wilson, N.C.) ....Oct. 29—p 1

CONSUMPTION & PRODUCTION:
Arkansas Formula Feed Tonnage Sales ....Oct. 15—p 96
Pennsylvania Feed Tonnage Reported ....Oct. 8—p 61

CORN:
Microingredient Problems in Feed ....Oct. 29—p 15
Putting Research to Work ....Oct. 1—p 46
Reports on Current Research (Florida Swine Day) ....Oct. 22—p 62

COTTONSEED MEAL:
Gossypol Elimination Aim of Cotton Study ....Oct. 15—p 94

CREDIT & FINANCING:
Broiler Credit Down in Southern States ....Oct. 8—p 105
Farm Credit System Loans Set Record ....Oct. 22—p 92
Feed Industry Finances Agriculture ....Oct. 29—p 72
Feeder Cattle Credit Easing in Corn Belt ....Oct. 15—p 74
Suggestions on Credit ....Oct. 29—p 59

CROPS:
Four Billion-Bushel Corn Crops Becoming Habit ....Oct. 8—p 1
Prospects Favorable for Record Crop ....Oct. 22—p 68

CROTALARIA:
Crotalaria Found in Soybean Shipments ....Oct. 15—p 48

DAIRY FEEDING:
Arkansas Formula Feed Conference ....Oct. 29—p 20
Dairy Farmers Record New High in Feeding of Grains, Concentrates ....Oct. 29—p 77
Milk Replacer Ration Test Results Reported ....Oct. 22—p 30
Texas Nutrition Conference ....Oct. 22—p 11

DISASTERS:
Maple Leaf Milling Co., Ltd. (Fire) ....Oct. 15—p 1

DISEASE:
Annual Swine Day (Missouri) ....Oct. 8—p 78
Chick Edema Not in Epidemic Stage ....Oct. 15—p 8
Connecticut Poultry Meeting ....Oct. 15—p 90
Disease Cause Being Investigated ....Oct. 15—p 8
Disease and Nutrition of Large Animals ....Oct. 22—p 46
Delmarva Regional Poultry Meeting ....Oct. 8—p 94
Edema Cases Said to Emphasize Care in Ingredient Use ....Oct. 15—p 8
Oral Antibiotic Shows Promise for Arresting Turkey 'Hock Disease' ....Oct. 22—p 1
Poultrymen Told to Watch Chick Edema ....Oct. 8—p 6
Temperature Extremes Are Factors Affecting Ketosis in Dairy Cows ....Oct. 15—p 96
Texas Nutrition Conference ....Oct. 15—p 6
Use High Vitamin A Against Capillaria ....Oct. 15—p 97

EDUCATION:
Feed Tech Advisors Study Growth Prospects at School ....Oct. 29—p 1
132 in Feed, Flour Studies at K-State ....Oct. 8—p 98
Staff Changes Made at U. of Illinois ....Oct. 15—p 77

EGG QUALITY:
'Fishy Eggs' ....Oct. 1—p 34

ENERGY:
California Animal Industry Conference ....Oct. 29—p 6
Florida Swine Day ....Oct. 22—p 62

ENZYMES:
Cattle Feeders Day (Montana State College) ....Oct. 29—p 12
Texas Nutrition Conference ....Oct. 22—p 11

EXCHANGES:
Chicago Board of Trade (SBOM Futures Rules, Contracts) ....Oct. 15—p 8; Oct. 29—p 43
Des Moines Grain Exchange (Election) ....Oct. 8—p 75
Memphis Board of Trade (Grain Inspection Unit) ....Oct. 15—p 31
Minneapolis Grain Exchange (Appointment) ....Oct. 15—p 94
(Grain Prices on TV) ....Oct. 15—p 97

FARM MIXING:
Farm Mixing Picture Hazy; Moderate Concern Indicated (Part 1) ....Oct. 22—p 1
Feed Men Tell What They're Doing to Combat Problem (Part 2) ....Oct. 29—p 7
Feed Production School ....Oct. 1—p 1

FATS:
Animal Fat Tested as Energy Source in Alfalfa Pellets ....Oct. 22—p 48
Edema Cases Said to Emphasize Care in Ingredient Use ....Oct. 15—p 8
Vegetable, Animal Fats Used to Add Energy to Beef Rations ....Oct. 8—p 30
Waste Fats in Finishing Rations for Drylot Hogs ....Oct. 8—p 86

FEED SUPPLIES:
Farm Grain Storage Jumps 18% ....Oct. 22—p 76
Feed Grain Stocks to Increase Despite Use Rise, Crop Drop ....Oct. 1—p 80
Growth of Forage on West Ranges Shortest Since '56 ....Oct. 22—p 44
Total Feed Concentrate Supply 271 Million Tons ....Oct. 29—p 1

FISH PRODUCTS:
'Fishy Eggs' ....Oct. 1—p 34
Production of Fish Meal, Scrap, Oils Up ....Oct. 22—p 52

FREIGHT RATES:
GFDNA Letter States Rate Increase Protests ....Oct. 22—p 8
ICC Cuts Rail Rate, Increases Truck Rate ....Oct. 8—p 6
Rail Rate Increases Approved ....Oct. 22—p 1
Rail Rate Increase Hearing Set Oct. 18 ....Oct. 8—p 4
Trade Groups Oppose Increase in Rates Asked by Railroads ....Oct. 22—p 8

GOOSE FEEDING:
Research on Geese Gets Wide Attention ....Oct. 15—p 97

GOVERNMENT AID:
Arizona Area Added for Emergency Feed ....Oct. 22—p 7
Nine Wyoming Counties Now Emergency Areas ....Oct. 8—p 48
S. D. Counties 'Emergency Areas' ....Oct. 15—p 50
22 Utah Counties to Get Emergency Feed ....Oct. 15—p 98

GRAIN SORGHUMS:
Research Compares Whole, Ground Milo for Fattening Pigs ....Oct. 15—p 83
Up or Down ....Oct. 8—p 76

GRIT:
Arkansas Formula Feed Conference ....Oct. 29—p 20

HAY:
Minnesota Beef-Grassland Field Day ....Oct. 8—p 14

HORMONES:
Annual Swine Day (Missouri) ....Oct. 8—p 78
California Animal Industry Conference ....Oct. 29—p 6
Cattle Feeders Day (Montana State College) ....Oct. 29—p 12
Florida Swine Day ....Oct. 22—p 62
Minnesota Beef-Grassland Field Day ....Oct. 8—p 14

INTEGRATION & CONTRACT FARMING:
Feed Contract Based on Cattle Performance Tested on Iowa Farm ....Oct. 29—p 1
Mississippi Poultry Unit Is Completely Integrated ....Oct. 29—p 10
New Ark. Egg Firm, Subsidiary of Feed Firm, Begins Operations ....Oct. 15—p 14
Nutrena Associated With New Egg Project in Tenn. ....Oct. 15—p 1
Trend Toward More Feed Milling in Integrated Bird Operations ....Oct. 8—p 70
Wisconsin Feed Man Raises 300,000 Broilers Annually ....Oct. 22—p 26

KELP MEAL:
Bowman Named Kelp Meal Distributor ....Oct. 8—p 6

LEGISLATION:
Capital Comment ....Oct. 8—p 4
Dynamite for Trade Seen in Kennedy Farm Proposals ....Oct. 1—p 1
Pennsylvania Millers & Feed Dealers Assn. Convention ....Oct. 1—p 1

LINEAR PROGRAMMING:
Economies of Linear Programming Cited as Reasons for Labeling Change ....Oct. 22—p 6
Texas Nutrition Conference ....Oct. 22—p 11

LITERATURE:
Book on Production of Crops Published ....Oct. 8—p 23
'Daring Venture' Tells Life Story of W. H. Danforth ....Oct. 15—p 26
Feedstuffs Handbook Issued by Publisher ....Oct. 22—p 27
Grain Movement Study Completed ....Oct. 8—p 91
New Book Published on Milk Production ....Oct. 15—p 34
'Assessment' of Beef Industry Published ....Oct. 15—p 40

LIVESTOCK FEEDING:
Disease and Nutrition of Large Animals ....Oct. 22—p 46

LIVESTOCK INDUSTRY:
Cattle Feeding Center Reported Developing in Texas, New Mexico ....Oct. 22—p 98
Law Urged to Stop Grocers, Packers From Feeding Beef ....Oct. 22—p 1
Range Country May Support More Cattle as Industry Shifts ....Oct. 15—p 98

LIVESTOCK NUMBERS:
Cattle Shipments to North Central Down ....Oct. 8—p 52
USDA Expects Hog Slaughter Below '59, Higher Prices ....Oct. 15—p 70
USDA Reports 1% Increase in Cattle on Feed ....Oct. 29—p 52

MANAGEMENT—BUSINESS:
Feed Marketing Seminar ....Oct. 8—p 8

MANAGEMENT—LIVESTOCK & POULTRY:
Annual Swine Day (Missouri) ....Oct. 8—p 78
Artificial Lighting Too Soon May Cut Young Hen Output ....Oct. 15—p 96
California Animal Industry Conference ....Oct. 29—p 6
Feed Service Conference ....Oct. 8—p 6
Florida Swine Day ....Oct. 22—p 62
Missouri Operation to Handle 28 Million Eggs This Year ....Oct. 1—p 18
Nebraska Study Indicates Round Farrowing Stall Has Advantages ....Oct. 15—p 76
New Feeder Cattle Benefit From Pasture ....Oct. 15—p 89
Northeastern Poultry Producers Council ....Oct. 22—p 6
Old Lighting Stand-Bys Often Best in Chicken House ....Oct. 1—p 67
Pigs Gain Faster With Hog Wallows ....Oct. 15—p 78
Relationship of Number of Feeders to Growth and Feed Efficiency of Broilers ....Oct. 22—p 38
Virginia State Poultry Federation Convention ....Oct. 29—p 14

MANURE:
Manure Disposal Poses Problem ....Oct. 8—p 24
Washington Man Pellets Cow Manure for Use in Nurseries ....Oct. 29—p 32

MARKETING:
Market Survey Helps Establish Feed Mill in Illinois ....Oct. 15—p 44
Michigan Hatchery Conference ....Oct. 22—p 32
Northeastern Poultry Producers Council Convention ....Oct. 15—p 4
Virginia State Poultry Federation Convention ....Oct. 29—p 54

MERCHANDISING:
Bulk Station and Farm Store Prove Good Investments ....Oct. 29—p 34
Feed Buying Preference Studied ....Oct. 15—p 1
Illinois Feed Dealer Involved in Major Swine Operations ....Oct. 8—p 18
Market Survey Helps Establish Feed Mill in Illinois ....Oct. 15—p 44
Oregon Firm Builds Sales With Slant to Big Cattle Ranchers ....Oct. 15—p 60
'Satellite' Blending Plant Exemplifies Industry Trend in Distribution Efficiency ....Oct. 1—p 42
Should the Feed Man Exhibit at Fairs? ....Oct. 1—p 70

MICROSCOPY:
Feed Microscopy Short Course ....Oct. 29—p 48

MINERALS:
Arkansas Formula Feed Conference ....Oct. 8—p 100
Calcium Needs for Laying Chickens ....Oct. 1—p 32
California Animal Industry Conference ....Oct. 29—p 6
Cattle Feeders Days (Montana State College) ....Oct. 29—p 12
Nebraska Feed & Nutrition Conference ....Oct. 15—p 10
Putting Research to Work ....Oct. 8—p 74
Texas Nutrition Conference ....Oct. 15—p 6

MOLASSES:
Blackstrap Molasses Firms Agree to Order Issued by FTC ....Oct. 15—p 59
Hawaiian Blackstrap Production Declines ....Oct. 29—p 48
Molasses Trade Growth Continued During July ....Oct. 8—p 48

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NITROFURANS:
Scours Protection Claimed for Nitrofuran ....Oct. 15—p 24
Symposium on Nitrofurans ....Oct. 1—p 58

PELLETING:
Barley for Hogs—A Decade of Research ....Oct. 15—p 28
Comparing Hay Fed in Various Forms to Weanling Calves ....Oct. 22—p 20
Microingredient Problems in Feed ....Oct. 29—p 15
Minnesota Beef-Grassland Field Day ....Oct. 8—p 14
More Milk, But Lower Butterfat With Hay-Concentrate Pellets for Cows ....Oct. 29—p 76

POULTRY FEEDING:
Arkansas Formula Feed Conference ....Oct. 29—p 20
Feed Service Conference ....Oct. 8—p 6
New Chemical Nutrient Mixtures 'Triple Growth Rate' of Chicks in Illinois Tests ....Oct. 29—p 8
Pullets for New Egg Program Raised in Woods ....Oct. 15—p 14
Texas Nutrition Conference ....Oct. 22—p 11

POULTRY INDUSTRY:
Broiler Production Shifting From Contracts to Salaries ..Oct. 8—p 66
Michigan Hatchery Conference ....Oct. 22—p 32
Need for Effective Poultry, Egg Promotion Noted ....Oct. 15—p 4
North Carolina Area's Poultry Advance Noted ....Oct. 22—p 36
Poultry & Egg National Board (Egg Facts Presented to Doctors) ....Oct. 8—p 10
Rapid Change Matches Rapid Growth of Georgia Broiler Industry ....Oct. 8—p 33
Says 'No Single Group to Dominate Guidance of Turkey Industry' ....Oct. 8—p 72
Says Turkey Growers Need to Consider Consumer Desires ....Oct. 29—p 14
South Shows Great Interest in Expanding Egg Production ....Oct. 15—p 80
Trend Toward Fewer Broiler Growers in East Texas Continues ....Oct. 8—p 20
Vermont Feed Dealers & Manufacturers Assn. ....Oct. 8—p 1

POULTRY NUMBERS:
August Pullorum Testing Reported ....Oct. 1—p 87
Broiler Replacement Reduction Is Urged ....Oct. 22—p 23
Egg-Type Hatch 13% Above 1959 ....Oct. 22—p 1
Heavy Breed Poult Hatch Up Sharply ....Oct. 22—p 7
Number of Potential Layers on Farms Hits Record Low ..Oct. 22—p 42
Sharp Increase Seen in Hatch for Laying Flock Replacements ....Oct. 29—p 49
September Placements for Broiler Hatchery Supply Flock Up 66% ....Oct. 22—p 106
Testing of Heavy Turkeys Sets Mark ....Oct. 22—p 4
Turkey Breeders to Hold 26% More Heavy Breed Hens ..Oct. 29—p 8

PRICES:
Fall Cattle Prices Expected to Remain at Current Levels ....Oct. 15—p 50
Hog, Broiler Feed Ratios Down Slightly ....Oct. 15—p 92
Predicts High Egg Prices for Six Months ....Oct. 29—p 13
USDA Expects Hog Slaughter Below '59, Higher Prices ..Oct. 15—p 70
USDA Predicts Higher Prices for Eggs, But Lower for Broilers ....Oct. 8—p 8

PRODUCTION & MILL OPERATIONS:
All Types of Pelleted Livestock Feed Produced at Oregon Mill ....Oct. 8—p 26
Bulk Station Serves Turkey Growers ....Oct. 15—p 38
Cost of Steam Rolling Barley Analyzed ....Oct. 8—p 62
Engineers Working on Weighing System for Trucks in Motion ....Oct. 15—p 23
Feed Production School ....Oct. 1—pp 10, 11
Industrial Engineering Analysis of Custom Feed Mill Activities ....Oct. 29—p 18
Iowa Firm Builds New Mill, Features Special Services ..Oct. 29—p 62
Market Survey Helps Establish Feed Mill in Illinois ..Oct. 15—p 44
New Push-Button Feed Mill in Operation in Texas ..Oct. 29—p 26
'Satellite' Blending Plant Exemplifies Industry Trend in Distribution Efficiency ....Oct. 1—p 42
Storage, Handling Problems as They Affect Grain Feeding Value ....Oct. 15—p 88
Well-Planned Plan Considered Essential ....Oct. 8—p 77

PROTEIN:
Arkansas Formula Feed Conference ....Oct. 29—p 20
Florida Swine Day ....Oct. 22—p 62
Texas Nutrition Conference ....Oct. 22—p 11

PROTEIN BLOCKS:
Protein Blocks Creating Minor Revolution ....Oct. 15—p 1

PUBLIC HEALTH:
To Study Whether Hazards to Workers in Handling Additives ....Oct. 15—p 1

QUALITY CONTROL:
Arkansas Formula Feed Conference ....Oct. 8—p 100

REGULATORY:
AFMA Describes Implications of Antibiotic Ruling ....Oct. 29—p 4
Amendment to Egg Grading Law Backed ....Oct. 15—p 62
Assn. of American Feed Control Officials ....Oct. 15—p 1
Blackstrap Molasses Firms Agree to Order Issued by FTC ....Oct. 15—p 59
California Animal Industry Conference ....Oct. 29—p 1
Comments on Customer Formula Feed Problem ....Oct. 22—p 52
Danger in Feeding Wastes Cited ....Oct. 15—p 70
Economies of Linear Programming Cited as Reasons for Labeling Changes ....Oct. 22—p 6
FDA Invites Trade to Consult on Regulations ....Oct. 8—p 1
Feed Control Comment ....Oct. 1—p 86; Oct. 15—p 66; Oct. 29—p 66
Feed Production School ....Oct. 1—p 1
Feed Service Conference ....Oct. 8—p 6
Fees on Feed and Seed to Pay for Inspection ....Oct. 29—p 27
Nebraska Feed & Nutrition Conference ....Oct. 8—p 1
New Developments and Problems in Feed Control ....Oct. 29—p 78
No Relaxation Seen in Zero Tolerance for Milk in Future ....Oct. 8—p 16
Pesticide Residue Problem for Trade in Calif. Eases ..Oct. 29—p 4
Regulation Extended for High-Fiber Feeds ....Oct. 22—p 61
Stiffer Regulation of Drugs Requested ....Oct. 8—p 1
Texas Nutrition Conference ....Oct. 22—p 11
Washington Plans to Screen Feeds ....Oct. 8—p 76

RESEARCH:
Dairy Calf Growing Emphasized at Tests at Feed Firm's Farm ....Oct. 15—p 24

RESIDUES:
Danger in Feeding Wastes Cited ....Oct. 15—p 70
No Relaxation Seen in Zero Tolerance for Milk in Future ....Oct. 8—p 16
Pesticide Residue Problem for Trade in Calif. Eases ..Oct. 29—p 4

SAFFLOWER:
Cattle Feeders Day (Montana State College) ....Oct. 29—p 12

SALES TRAINING:
Organizing and Operating a Sales Training Dept. ....Oct. 1—p 14

SELENIUM:
Arsenicals, Selenium in Feeds Attacked ....Oct. 22—p 107

SERVICE:
Bulk Station and Farm Store Prove Good Investments ..Oct. 29—p 34
Pennsylvania Millers & Feed Dealers Assn. Convention ..Oct. 1—p 1
Rapid Change Matches Rapid Growth of Georgia Broiler Industry ....Oct. 8—p 33

SILAGE:
Minnesota Beef-Grassland Field Day ....Oct. 8—p 14

SOYBEAN OIL MEAL:
AFMA Distributing Soy Meal Guides ....Oct. 8—p 61
Chicago Issues New SBOM Futures Rule ....Oct. 15—p 8

SOYBEANS:
Expanded, Whole Soybean Feed for Broilers ....Oct. 22—p 51
Full-Fat Soy for Swine Studied ....Oct. 22—p 23
Will Soybean Stock Position Provide 'Bullish Surprise?' ..Oct. 29—p 4

SWINE FEEDING:
Annual Swine Day (Missouri) ....Oct. 8—p 78
Barley for Hogs—A Decade of Research ....Oct. 15—p 28
Florida Swine Day ....Oct. 22—p 62
Research Compares Whole, Ground Milo for Fattening Pigs ....Oct. 15—p 83
Texas Nutrition Conference ....Oct. 15—p 6

TRANQUILIZERS:
Florida Swine Day ....Oct. 22—p 62
Report on Dairy Cow Tranquilizer Use ....Oct. 15—p 94

UNIDENTIFIED FACTORS:
California Animal Industry Conference ....Oct. 29—p 6

VACCINATION:
Feed Service Conference ....Oct. 8—p 6

VITAMINS:
B-Vitamins Play Important Role With Turkey Breeder Hens ....Oct. 22—p 30
Microingredient Problems in Feed ....Oct. 29—p 15
Minnesota Beef-Grassland Field Day ....Oct. 8—p 14
Putting Research to Work ....Oct. 15—p 20
Use High Vitamin A Against Capillaria ....Oct. 15—p 97
Vitamin A Liver Storage in Pullets and Hens ....Oct. 15—p 18

WAFERS:
Comparing Hay Fed in Various Forms to Weanling Calves ....Oct. 22—p 20

Egg Production Maintained with Less Floor Space

GAINESVILLE, FLA. — With the cost of laying houses rising, recent tests at the University of Florida indicate that the amount of floor space per layer may be reduced and layers will maintain satisfactory egg production.

Pullets allowed 1.5, 2.0, 2.5, 3.0 and 3.5 sq. ft. per bird varied only slightly in the number of eggs produced, Dr. R. E. Cook, poultry division, pointed out to the Florida Nutrition Conference and the annual convention of the Florida Feed Dealers Assn.

Comparisons were made using commercial White Leghorns that had been raised with one half in confinement and the balance having free access to range. Both groups were raised in the same type of pens, with the amount of floor space balanced. Feeder space and nests were adjusted in all pens so that each bird had an equal amount of feeder and nest space.

The pens were started with approximately 4 in. of dry shavings for litter, with the level increased after three months to approximately 6 in. The litter was stirred on an average of once a week.

"The results from the 11 month test indicate little difference in egg production between the various floor space allowances on the range- and confinement-reared birds. The mortality was very low in all pens for the entire period of the test, with no advantage being noted for any rearing method or floor space allowance. Litter condition was the greatest disadvantage noted. The pens with 1.5 and 2.0 sq. ft. per pullet soon became damp and caking was observed throughout the last half of the test. Along with the wet litter, the number of dirty eggs increased," he said.

The tests were made in a concrete block laying house, with no mechanical ventilation. There was no great difference in the mortality rate, the greatest problems being with dirty eggs and dirty hens.

The tests are going to be continued for another year with different types of litter being used in the experiments, Dr. Cook said.

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NEW SWINE CENTER—Modern design of the new swine center at Pennsylvania State University features a central headquarters building and three wings, two shown here. Each wing contains 24 farrowing pens with solar heating.

New Swine Center Opens at Penn State

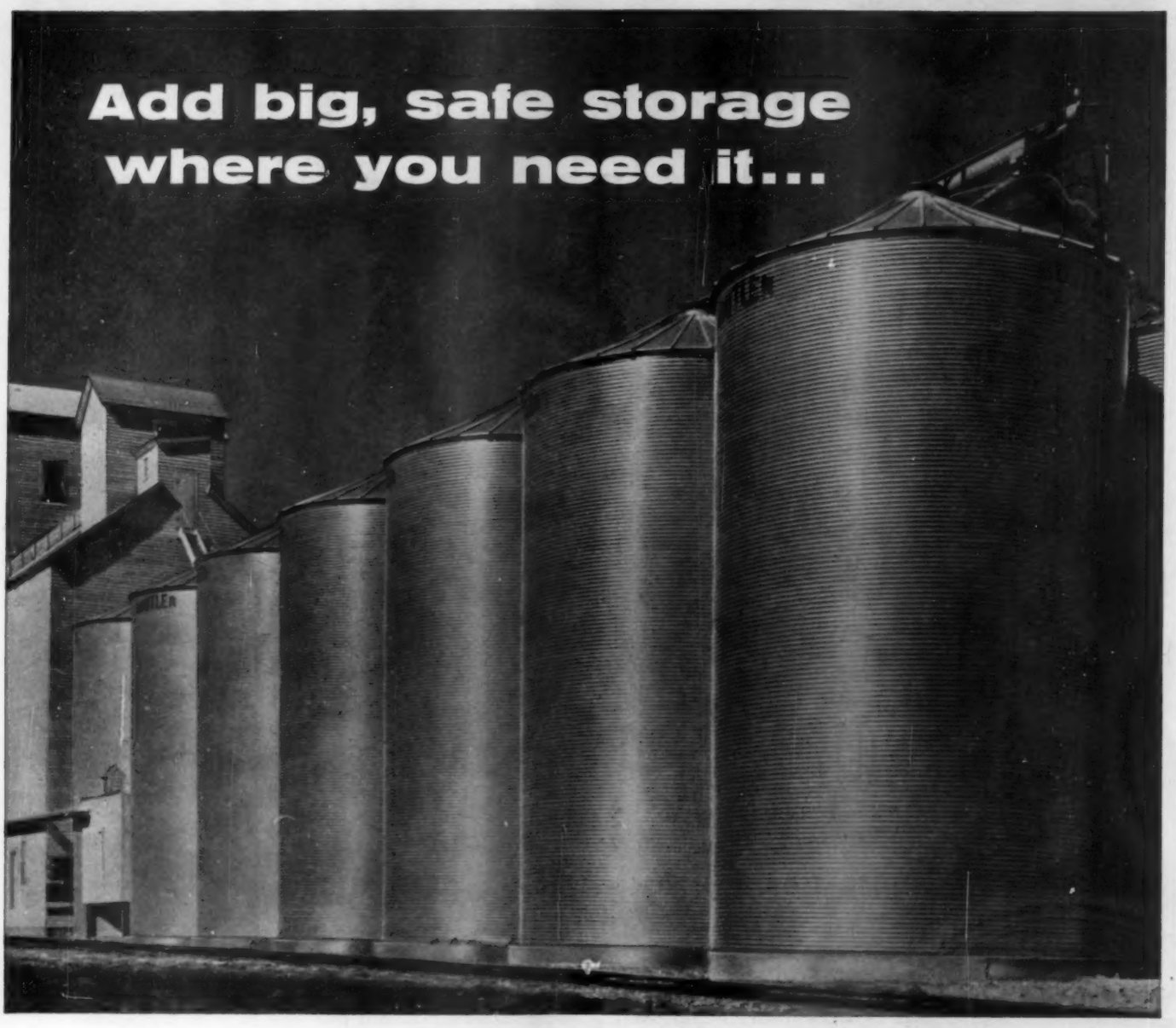
UNIVERSITY PARK, PA.—A new swine center and meats laboratory were opened recently at Pennsylvania State University. The facilities make Penn State one of the best equipped universities for research and training in livestock and meat production.

The swine center was erected by the General State Authority of Pennsylvania at a cost of $265,000. It was designed by J. Larry Gobble, in charge of swine production, and Grant W. Sherritt, animal husbandry instructor.

The center includes a main building and three wings. Central headquarters houses an office, laboratory, small instruction arena, and a feeding room on the main floor. Above are six grain bins having a capacity of 90 tons of shelled corn, and 28 smaller bins holding 35 tons of mixed feed, a hay loft, and a bedroom for two student attendants.

The three swine center wings each contains 24 pens and are designed for solar heating. At any one time, 24 sows with their litters and 228 growing pigs can be housed. Since six farrowings a year are planned, more than 1,000 hogs can be produced each year.

The building is located one mile east of the main Penn State campus on a promontory overlooking 335 of its own acres and scenic countryside.



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Average 63.7 lbs. more pay weight per head from pasture to feed lot to stock yards.

How the feeding trial was conducted. On May 6, 1958, twenty-four Hereford steers with an average starting weight of 550.5 lbs. were randomly allotted into two test groups of twelve steers each. The two groups were placed on adjoining pastures in Woodson County, Kansas.

The entire test ran continuously for 549 days under the supervision of Kansas State University, and covered four feeding periods: pasture, winter, pasture, and finishing.

Feed used during the trial was identical—except the 12 steers in one lot received a plain salt-bonemeal mixture while the steers in the other lot received a mixture of bonemeal and Morton T-M Salt.

The cattle were weighed off pasture on August 1, 1959. Gain was only 8 lbs. per head greater for the cattle fed Morton T-M Salt. However, after a 134 mile trip to the feed lot in Manhattan, both groups were again weighed individually off the truck and the T-M fed cattle averaged 21.7 lbs. more pay weight than the cattle fed plain salt!

The first week in the feed lot the T-M fed steers lost 5 lbs. less than the steers on plain salt. Both groups were put on a 90-day full-feed finishing ration of ground corn, prairie hay and 1 lb. of soybean meal per head daily (containing 10 mgs. of diethylstilbestrol.) After a three week starting period, corn and prairie hay were available at all times on a free choice basis. The one group of steers continued receiving the plain salt-bonemeal mixture and also plain salt, free choice, while the other group continued receiving the Morton T-M Salt-bonemeal mixture and also Morton T-M Salt, free choice.

At the end of the finishing period all cattle were again weighed. The T-M fed steers showed an additional average gain of 23 lbs. *more* than the cattle fed plain salt.

After a 125-mile truck trip to the Kansas City Stock Yards, the cattle were weighed once more and the steers on Morton T-M Salt averaged 11 lbs. per head *more pay weight* than the steers on plain salt!

The cost of feeding Morton T-M Salt, free choice, at the feed lot was 35¢ more per cwt. of gain, with the *total* increased feed cost per head $1.19. But the steers on Morton T-M Salt gained 23 lbs. more during this period than the steers on plain salt and then added another 11 lbs. in pay weight at Kansas City, an average *total gain* of 34 lbs. per head! Comparing the cost of gain with Morton T-M Salt and a conservative selling price per cwt... the feeder is getting back more than $7 for every $1 invested in Morton Trace-Mineralized Salt!

It all adds up to bigger profits for your customers when they feed Morton T-M instead of plain salt: the 8 lbs. gain on pasture—plus the extra 21.7 lbs. in pay weight from pasture to feed lot—and the additional 34 lbs. in favor of the Morton T-M fed cattle from the time they were in feed lot to the day they were weighed out at the stock yards! Customers want important dollar gain differences like these that come from the exclusive formulation of trace minerals and salt available only in Morton T-M Salt. So stock Morton T-M Salt. Order now from your Morton Salesman or write:

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Kansas State University Circular #378 carries a complete report of this feeding trial.

Corn Use in Past 3 Years Sets Records

URBANA, ILL.—The fact that the disappearance of corn in each of the past three years far exceeded all previous records has been pointed out by L. H. Simerl, University of Illinois agricultural economist. And he has gathered evidence which seems to support the belief that reducing the price of corn has brought about much of the increase in the use of this grain as feed for livestock and poultry.

Disappearance of corn in the year ended with September totaled 4.1 billion bushels, which represents an increase of 10% over the year before, 21% over two years earlier and 33% over the five-year average ended in 1957.

Total use, or disappearance, of corn first topped 3 billion bushels in the year which started in October, 1942. In that year, farmers fed up surplus stocks that had accumulated just before World War II, and disappearance totaled 3.2 billion bushels. Then for 15 years the amount used stayed in the 3 billion- to 3.2 billion-bushel range. (The year 1947-48 was an exception. The corn crop was short in 1947, and only 2.5 billion bushels of corn were used.)

Questions for Consideration

"The big jump in corn use in the past three years provides some important questions for consideration by farmers and Congress," Prof. Simerl comments. "One is: 'What caused the big increase in the disappearance of corn?' Another: 'What is the relation of price supports and price levels to the rate of use of corn?'"

He recalls that a principal argument for reducing the price-support level for corn was that it would promote increased consumption. The national average support level was around $1.60 bu. from 1952 through 1956. Then it was gradually reduced until it was $1.12 this past year.

Prices received by farmers for corn sold at local markets averaged $1.47 bu. during the first seven years of the 1950's. The last three corn crops brought $1.12, $1.03 and about $1 bu., respectively.

Other Feed Grains Gain

"The huge disappearance of corn in the past three years, 1957-1959, occurred in spite of an unprecedented increase in the production of other feed grains," Prof. Simerl noted. "Until three years ago, the production of sorghum grain never exceeded 250 million bushels. In the past three years the output of sorghum grain ranged from 564 million to 610 million bushels, or more than double the biggest previous crops."

The production of barley was far greater in the past three years than in any previous three-year period. The oat crop was small in 1959, but the average for the three years was about normal.

Exports of corn about doubled in the past three years, increasing from less than 100 million bushels a year to over 200 million bushels. There has been little change in the use of corn for food and industrial uses, which take around 265 million bushels annually. "Thus, the big increase in the use of corn is on farms, as feed for livestock and poultry," Prof. Simerl concluded.

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Feed Income Doubled By Iowa Farm Bureau

DES MOINES—Income from feed sales was more than doubled by the Farm Bureau Service Company of Iowa during 1959-60, E. O. Johnston, general manager, reported at the organization's annual meeting here Nov. 15. The increase during the fiscal year was from $370,000 to $850,700.

Tonnage almost duplicated that record. The growth in feed volume was from 4,400 to 8,000 tons.

Mr. Johnston reported that at the end of the fiscal year, 30 of the member Farm Bureau Service companies in Iowa were distributing feed in 59 of the state's 99 counties. The annual report said 70 farmers had installed electric mix mills, distributed by Farm Bureau, and tentative plans have been drawn for installation of these small mills on an additional 150 farms.

Total sales of Farm Bureau Service Company of Iowa topped the $24 million mark, Mr. Johnston said. This provided a net income of $1,107,617, of which $687,070 was returned to member service companies. Remaining income was divided among income taxes, $230,614; dividends, $79,171, and undistributed savings, $110,762.

The company's plant food-feed division accounted for 31% of total sales. Fifty five per cent came from the petroleum division, 6% from farm supplies and 8% from marketing.

Net worth of the company grew to $3,989,786, an increase of $498,071.

Ghostley Appoints District Sales Head

ANOKA, MINN.—Appointment of Charles S. Kenyon, Jr., as a district sales manager for Ghostley's Poultry Farms, has been announced by Fred Ghostley, general manager.

C. S. Kenyon, Jr.

Mr. Kenyon will represent the firm in the eastern section of the Midwest plus Canada. He is moving to Indiana to be centrally located in his new sales territory, Mr. Ghostley said. The new sales manager is a graduate of the University of New York and has had previous experience with two national chick distributors.

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NEW EQUIPMENT—Occident Elevator, Laurel, Mont., shown above, is one of the Occident group now operating steam rolling equipment.

Occident Feed Mills Install Steam Rollers

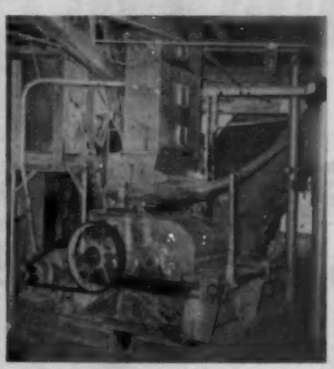
MINNEAPOLIS — Seven Occident Elevator feed plants in North Dakota and Montana have installed steam rolling equipment. Those units are at Mandan, Jamestown, Beulah, Dickinson, Minot and Valley City, N.D., and Plentywood, Mont., according to T. J. Beggs, vice president and general manager.

"The addition of the new facilities will make our elevators the most complete grain and feed service centers in the two states," said Mr. Beggs.

Other feed plants in the group now operating with steam rollers include: Columbus, Laurel, Hardin, Miles City, Terry, Glendive, Sidney, Wolfe Point, Culbertson and Conrad, Mont., and Mott and Beach, N.D.

Mr. Beggs said, "We feel that our future plans must be geared to the rapidly increasing demand for complete livestock feeds. The future economy of North Dakota and Montana depends greatly on more and better livestock feeding. It is our intention to promote sound feeding programs that will utilize the vast quantities of feed barley grown in the two states. This can be done by encouraging the feeding of more livestock to market grades."

Vitamins and concentrates such as molasses are added to increase the food value before sacking or bulk sale.



STEAM ROLLER — Shown here is the steam roller installed at the Glendive, Mont., Occident Elevator and feed plant. It can process grain at the rate of six tons per hour. Grain is passed over a separator to eliminate foreign matter and then steam cooked under pressure until properly tempered for rolling.

Name New K-State Agriculture Dean

MANHATTAN, KANSAS — Appointment of Dr. Glenn H. Beck as dean of agriculture at Kansas State University, Manhattan, has been approved by action of the Kansas Board of Regents.

Dr. Beck has been director of the Kansas Agricultural Experiment Station since 1956, will have administrative charge of the total educational agriculture program at the state's land-grant university. He will coordinate extension, academic, and research phases of agriculture.

Dr. Beck succeeds Dr. Arthur D. Weber, who recently was granted a leave of absence to direct a $150 million five-year Ford Foundation food production project in India. Dr. Beck has been serving as acting dean of agriculture since Dr. Weber's departure Nov. 1.

Gerber Announces Branch Warehouses

MINNEAPOLIS — Gerber Sheet Metal, Inc., has announced the establishment of two branch warehouses which will stock the complete line of Gerber grain and feed handling equipment.

Cecil Herring, Gerber president, said that Edward J. Heck & Sons Co., 1309 Leavenworth St., Omaha, and Morrison Supply Co., 217 East Alder St., Walla Walla, Wash., are now operating as factory warehouses.

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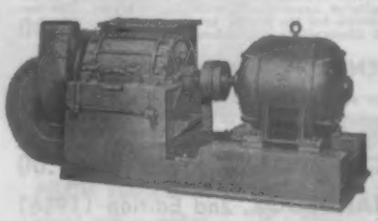

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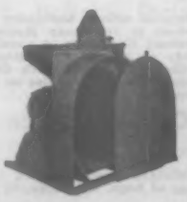

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EGG PROMOTION—Morton Salt Co. will lend support in January to the "Golden Goodness of California Fresh Eggs" month through point-of-sale displays such as the one shown above, it was announced. The promotion is being conducted by the California egg industry in cooperation with Hess & Clark, Ashland, Ohio, basic maker of nitrofurans and feed medications. The displays are scheduled to appear in 3,000 large retail outlets in California, the announcement stated.

Jute Bags Tax Free If Made for Use Once

TORONTO—Canadian Feed Manufacturers National Assn. has been informed by the Canadian Excise Tax Administration that jute bags not designed for repeated use are not subject to sales tax.

Last spring the Minister of Finance had introduced a budget resolution to amend the exemption from sales tax for "usual coverings or usual containers" not including coverings or containers designed for dispensing goods for sale or designed for repeated use." Flour bags were specifically mentioned but feed bags were not.

Later the department was advised that jute bags were being returned to bona fide feed manufacturers for repeated use by the feed manufacturers. The department has now ruled that they will be subject to sales tax and only bags that are non-returnable to the feed manufacturer will be exempt from sales tax, according to word from the feed manufacturer group.

E. W. Thomas Heads Liquid Feed Assn.

KANSAS CITY—E. W. Thomas, Farm Service, Inc., North Boonville, Mo., was elected president of the Liquid Feed Assn. following the recent annual meeting of the organization in Kansas City (Feedstuffs, Nov. 26). Jay Friedman of Liquid Feed, Inc., Alton, Ill., was named vice president, and R. L. Faubion, Sr., president of R. L. Faubion Co., Kansas City, was chosen secretary-treasurer.

Five new directors were chosen. The two men named for a one-year term to fill vacancies on the board were Norman Dean Godden, Flo-Lizer, Inc., Kingston, Ohio, and John Scholten, Richland Farm Service, Richland, Mich.

For three-year terms, the group elected Mr. Faubion and Warren W. Spring, Spring Chemical Co., Milledgeville, Ill., and Jack von Mettenheim, Illinois-Wisconsin Liquid Feed Co., Princeton, Ill.

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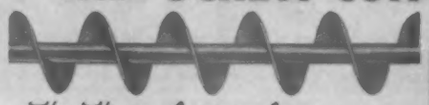

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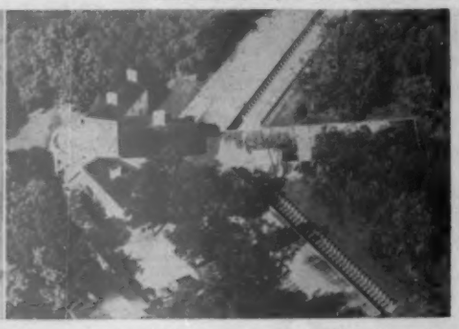

FOR PET FOOD STUDY—The Quaker Oats Co.'s new dog and cat kennels for nutritional research near Barrington, Ill., Chicago suburb, are contained in a unit which has been called "the largest and most complete facility ever erected exclusively for pet feeding and nutritional studies." The establishment, recently dedicated, combines the appearance of a large southern colonial residence with the modernity of completely functional structures. The first photo shows the main building of colonial architecture. It houses the reception room and foyer (center), library and conference rooms (left) and laboratories and offices (right). The long corridor shown in the second picture marks the middle of one of the two dog quarters which are wings extending from the center section of the research building, as shown in the third picture. The center "finger" is the north wing cattery. Present pet populations at Quaker Oats research center are 100 dogs and 200 cats. Facilities are large enough for more, however. The center's staff totals 15 persons, including a manager of pet food research, a nutritionist, a veterinarian, an engineer, two chemists and other personnel. The new installation replaces and improves upon a dog nutrition research kennel maintained at Rockford, Ill., by Quaker Oats, manufacturer of Ken-L-Ration dog food and Puss 'n Boots cat food.

NEW JERSEY

(Continued from page 10)

shell quality should be taken into account when calcium-free diets are fed for the purpose of antibiotic potentiation."

He said that shell quality is reduced within two days and that within five days the egg shells will be less than two thirds as thick as before. Later measurements cannot be made since by that time the hen will cease egg production, he commented.

Speaking of the recent trend to increase the calcium levels and to decrease phosphorus levels in laying diets beyond the 2.25% calcium and 0.6% phosphorus recommended by the National Research Council, he said that a poultryman cannot assume that a laying hen requires a fixed ratio of calcium and phosphorus.

It's safe to talk about this ratio in the case of the growing chick, he said, because the relationship is based on the composition of bone, but no fixed ratio should be taken for granted in the case of the hen.

Tests have shown that a hen needs relatively little calcium to maintain her body, but considerably more for egg formation. Illustrating this is the fact that a laying hen's whole body contains less than a single ounce of calcium, but when she is laying well she puts out more than a pound of calcium in her egg shells in a year.

Phosphorus also is needed to a considerable extent for body maintenance. A hen needs about 1 oz. of this element to maintain her skeleton and tissues for a year. She puts a little more than an ounce of phosphorus in her eggs.

The conclusion to be drawn is that for a higher producing hen, the increase in the calcium requirement would be of a greater magnitude than that of the phosphorus requirement.

Dr. Griminger and others at Rutgers have been looking into the calcium metabolism of the laying hen for three years.

They found out early that low calcium levels affected egg production more than shell thickness. Of course low calcium levels cause poor shells, but it's not safe to rely on shell quality as the only measurement of calcium sufficiency, since the hen can also reduce her egg production to conserve calcium.

Rutgers researchers have been making their study with the help of a hen whose organs they have altered so that she excretes feces and urine separately. This makes it possible for them to measure how much each mineral is absorbed and how much is passed off as waste. The research has shown that calcium and phosphorus are absorbed at the same rate but that a much larger percentage of the phosphorus appeared again in the urine.

HOW MUCH FEED DO CHICKENS WASTE IN THE DRINKING WATER? — Dr. Harold S. Weiss, physiologist, described to the conference how he measured feed recovered from the laboratory equivalents of deep water pans, shallow troughs and "dewdrop" waterers. Chickens wasted most with mash and the deep pan—between 3.4 and 4.5% of feed consumed, he said.

The half-inch deep trough was an improvement, but mash wastage still amounted to 1.3 to 2.5%.

Dr. Weiss noted the lowest losses with the dewdrop system and pellets —less than 0.1%.

Pellets alone cut all losses to 0.6% or less of the feed intake, regardless of the watering system used.

Dubbed birds wasted as much mash as their sisters with normal wattles. Debeaking actually increased losses when mash was fed, Dr. Weiss said.

It was easy to see during the experiment that there were differences in "table manners" among the 10 Leghorns. The sloppy eaters wasted more mash than their sisters with the more refined ways of eating and drinking.

COCCIDIOSIS—STILL A PROBLEM—Dr. David C. Tudor, Rutgers poultry disease researcher, drove home the point that chickens must develop immunity to each species of coccidiosis, still a problem in New Jersey. Last year Rutgers pathologists diagnosed 464 cases of cecal coccidiosis involving 1,235 birds and 1,233 cases of intestinal coccidiosis involving 2,328.

The disease still makes trouble, Dr. Tudor noted, even though 35 individual drugs or products for its control have been introduced since 1939.

Prevention is not the aim in dealing with coccidiosis, he said, but suppression or control is important. Suppression is vitally important in broiler flocks, but a decided disadvantage in replacement flocks. Poultry scientists in Georgia have found that some drugs suppress the disease more completely than others.

PERFORMANCE ASPECTS OF LOW-COST POULTRY HOUSING—The Rutgers experimental plastic bubble poultry house continues to teach lessons about the response of chickens to environment, reported Dr. Robert L. Squibb, poultry science department chairman.

On the whole, the birds that were placed in the bubble as day-old chicks are now laying at about the same rate as chickens in the random sample test. Body weight of "bubble" birds is only slightly less.

Temperatures of 105-112° have not been uncommon in the air-supported structure and the mercury once rose to 117°. Birds were able to make a comeback each time because the night temperature dropped 40-50°.

These experimental birds continue to confirm the hypothesis that wide diurnal temperature ranges help poultry during periods of hot or cold stress conditions.

Half the birds in the Rutgers Random Sample Test are being kept in community cages. Figures from the test confirm what has been found in other areas—that production is 2 to 4% higher on the floor.

There is a tendency for increased cannibalism and fly problems under the cage system. However, these obstacles may be overcome by proper debeaking and sanitation.

Studies of housing, environment and labor costs are designed to help New Jersey poultrymen close the gap with competing areas, Dr. Squibb noted. He reminded his audience that Garden State eggmen still have nearness to markets and experience on their side.

ENGINEERING ASPECTS OF LOW-COST POULTRY HOUSING—Charles H. Reed, agricultural engineer, went further into the housing topic, describing a minimum cost solar front house that could be written off in 12 years. At the same time it would make possible lower annual costs than a house costing twice as much and lasting three times as long.

The house has a tilted front that permits the sun's rays to warm and dry the litter in the southern half. It has maintained dust-dry crushed corncob litter with a tenancy of one Leghorn layer for every two square feet. Also, it seems to be satisfactory for housing layers in community and individual cages.

One commercial farm in the state is also testing the house, but Mr. Reed is not yet ready to release

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FLORIDA NUTRITION CONFERENCE—Several of the speakers at the Florida Nutrition Conference and annual meeting of the Florida Feed Dealers Assn. are shown in the above series of pictures. In the left photo, from the left, are: Dr. D. V. Frost, Abbott Laboratories, North Chicago; Dr. G. E. Combs, University of Florida, and Dr. F. N. Andrews, Purdue University. In the center photo, left to right, are: Dr. R. H. Harms, University of Florida, and Dr. M. W. Paavogel, Peter Hand Foundation, Chicago. In the photo at the right, from the left, are: Dr. W. L. Sippell, chief, diagnostic laboratories division, Florida Livestock Board, Kissimmee; Dr. John R. Rosseau, University hospital, and Vincent Stewart, Florida Department of Agriculture.

ADA HOLDS SALES WORKSHOP—"A Fistful of Future in Selling" was the theme for the recent Sales Workshop held in Kansas City by the American Dehydrators Assn. Ralph Everett (left), Empire Sales Training Center, and Dr. L. E. Card, University of Illinois, teamed up to give nearly 75 dehydrators basic selling principles and nutritional information. The new ADA movie, "Twelve Month Summer," was also shown during the day-long session.

plans, he said, until results can be observed on a few more farms. He emphasized that exact specifications must be followed if the house is to function properly.

Looking back on many years of diagnosing poultry diseases in his laboratory, Charles B. Hudson, research specialist in poultry pathology, offered some salty comments about men who can tell what ails a chicken by looking at it through a window or "listening to it snore." Mr. Hudson picked a bone also with those who make up charts to diagnose diseases.

He asked for full cooperation between the diagnostic laboratories and servicemen so that both can do more good for the poultryman.

Just back from a year in Scotland, where he worked at the Poultry Research Centre, Edinburgh, Dr. Paul D. Sturkie, physiologist, reported that agricultural research in Britain is of a high caliber.

Response Indicates Interest in NEC's Egg Pricing Plan

KANSAS CITY, MO.—The recommendation last month by the National Egg Council that the trade depart from using central wholesale markets as a basis for price determination in eggs has brought forth response indicating great interest in the council's egg pricing plan.

A number of producers, a large retail unit operating in several states and a feed company actively engaged in producing and marketing eggs asked for additional details. Several extension poultrymen sought more information.

NEC officers propose that producers tie their sales price to the retail quotation with a floor set at a "cost of production" level which would fluctuate seasonally.

Speaking to egg producers in Illinois, Don Turnbull, NEC assistant secretary, declared that some local wholesale markets are tied to the Chicago and New York wholesale prices even though there is no instance in history where eggs flowed in that direction. "They might as well tie in with the price of bananas in Nicaragua. There is as much relationship," said Mr. Turnbull.

NEC also voiced its opposition to any form of federal program involving production quotas. It expressed the belief that any government agency charged with administrating such a program would be fraught with frustration.

The council's fall membership drive got off to an enthusiastic start, according to Carroll Eiler, Warsaw, Ind., president. Membership is reported now in every state on the mainland except Delaware, Montana, New Jersey and North Dakota. The smallest flockowner member reports 400 birds in his flock; the largest, 68,000.

Inquiries arrive daily concerning procedures to follow in establishing state chapters, Mr. Eiler said.

Columbus Feed Club Plans Holiday Party

COLUMBUS, OHIO—The Columbus Feed Club will hold its annual Holiday Party on Dec. 10, at the Winding Hollow Country Club, in Columbus, it has been reported.

Program for the evening includes refreshments, dinner, professional entertainment, door prizes and dancing. Members of the Columbus Feed Club are invited to bring guests and prospective members.

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GROUP BUYING

(Continued from page 4)

fringe benefits, with the lowest cost labor being paid about $2.35.

As mentioned above, the feed prices are based on quoted ingredient prices, and any advantage gained in ingredient buying goes to the mill. Some observers say that the mills are able to make up in part for the low charges by managing ingredient buying so as to pick up some additional margin. Others contend that this is not a major factor.

It is in this area of ingredients, moisture level, ingredient quality, etc., that critics claim there may be deficiencies. They contend that quality cannot be as good as in other feeds.

Also, some say that some of the reasons given for lower costs are, in turn, weaknesses in the program. For example, they say that formulation may lag, that the feeds are not supported by good industry research, that service is not provided.

Others are quick to reply that ingredient quality is good, that the feed must meet control requirements like other feeds, and that feeding results and cost records will support their contentions.

Some say that while other poultrymen were losing money during low egg prices last year, producers in buying groups were making 75¢ to $1.25 per bird and taking vacations in Hawaii. They say that producers get feed efficiencies of 3.8 to 4.0 lb. of feed per dozen eggs, that laying mash costs may run no more than 11¢ per dozen, that feed costs for replacements and layers will run about 14-15¢ per dozen. They say that production will average 20 dozen eggs per bird per year and that even when egg prices were down to 25¢ doz., a good many producers were making money.

Others dispute some of these things. These persons say that many producers are not getting as good results as they think; that the producers are extremely conscious of feed prices but not conscious enough of results; that record keeping may not be adequate. They say that if "fair comparisons" were made with all factors considered, many producers could do as well or better with other feeds.

And so it goes—as with any extremely controversial topic, there are a good many opinions, claims and counter-claims.

The number of mills involved in these programs is relatively small, but, of course, the total tonnage is substantial, particularly when viewed on the basis of the feed busienss in some other parts of the country. Some persons claim that, in spite of the low margins, some mills serving buying groups are making a better return on their capital investments than are many firms in more conventional operations. This, they say, is possible because of high volume, low costs, rapid turnover and efficient operations.

However, most feed men will argue vehemently against the practice of serving groups, and a number say that they will or have refused to get into this type of operation when asked to do so. For one thing, they may not want to hitch their businesses to serving just a few very large buyers and having to do it on a "cut-throat" bid basis. Others, at the same time, will contend that the practice will gradually increase and that mills who refuse to get into it will see some potential customers making their own feed in at least some instances, or eventually obtaining it from other sources.

While some observers, in other regions as well as in California, see the practice as likely to be tried in new areas, there are many who claim that it will be slow in coming, if at all. Flatly refusing to become involved with buying groups, they argue that the practice results in serious deterioration of returns in the feed industry, that the system is not sound, and that producers are not served so well as is claimed. Even some people who are in it, they contend, would strongly prefer to be out of it but now can do nothing about it in areas where the system is established.

Some say it is here to stay and will expand, whether feed people like it or not; others say they will have no part of it. And that is how the situation stands.

EXAMPLES

(Continued from page 1)

program will cover both the latest developments in nutrition and the practical application of this knowledge and veterinary medicine to improved livestock production.

An added feature of the program will be a special luncheon for ladies Dec. 12. The luncheon in the Georgian Room of the Continental Hotel will feature a style and gift show.

RULING

(Continued from page 1)

FDA has recommended that the case be appealed.

The case is of interest to feed manufacturers as well as food manufacturers. In the feed industry, the general interpretation has been that if ingredients or additives are shipped interstate, FDA regulations apply to the feed even though it may go only to feeders within the same state where it was made. Under the New York ruling, those doing a feed business only on an intrastate basis would not be affected by FDA regulations.

In the New York case, a cooking oil labeled as containing 25% pure olive oil was seized on the charge that the product contained little or no olive oil. The government alleged that the oil was misbranded while held for sale after shipment in interstate commerce because it had been prepared by blending oils that had been shipped into New York from outside the state.

The claimant, A.M.S. Packing Co. of New York City, filed a motion to dismiss the action on the grounds that the seized goods were not in interstate commerce and not subject to federal law. The District Court did not rule on the question of whether the goods were in fact misbranded, but ruled for the claimant that the goods were not in interstate commerce because the raw materials which moved in interstate commerce were legal at the time of movement, and the finished and complete article alleged to be misbranded was manufactured and sold only within the state.

The opinion of Judge James T. Foley stated in part: ". . . I see no consequences here of gravity to the citizens of New York because New York has many statutes to reach the evil if it does exist in the labeling of the product. It is a good example where local government is able to act wisely and efficiently in the interests of its citizens and Federal intrusion should be restrained."

POULTRY CO-OP

(Continued from page 1)

the Northeastern Poultry Cooperative Assn.

The charter of the association, a "cooperatives' cooperative" representing more than 20 marketing groups, was amended to permit membership by groups from other sections. The stated purpose of the cooperative is to aid the member groups in the more orderly marketing of poultry and eggs with a minimum of unreasonable price fluctuations.

"There can be no place for sectionalism in the poultry industry's future," commented J. C. Weisel, Rosemont, N.J., outgoing head of the cooperative. "Closer working relationships with other areas of the nation are imperative if the industry is to continue its forward progress."

The annual meeting saw Eino Olly, Hubbardston, Mass., named as Northeastern's new president. Walter Klammer, Wayne, N.J., was chosen as vice president; Ray R. Flummerfelt, Ithaca, N.Y., treasurer, and Dr. Alfred Van Wagenen, Northeastern Poultry Producers Council (NEPPCO), secretary.

In marking "one of the best years in its seven year history," Northeastern upped its accumulated patronage refunds, sharply expanded the number of cases of eggs handled and reduced its handling costs, members were told. Handling costs dropped from 1.45¢ per dozen to 1.1¢, while the number of cases handled rose from 179,753 to 241,162. The group declared its regular 5% dividend on preferred stock and noted the admittance of five new groups to membership.

Featured speaker at the all-day session at the Sheraton-Atlantic Hotel was D. W. Brooks, general manager of the Cotton Producers Assn., Atlanta, one of the largest broiler marketing agencies in the country. "Cooperatives must expand, merge and become large in order to effectively merchandise poultry and eggs in the years ahead," he declared. "Only in this fashion can they effectively meet the needs of fewer and larger buying accounts."

FEEDLOT

(Continued from page 1)

boring towns of Laurinburg and Maxton near the South Carolina border. The commission's initial feeding contract is with a large packing plant in Wilson, N.C. Feed for the cattle comes from Upchurch Milling Co. of Raeford, N.C., about 20 miles north of Laurinburg.

Already, 475 head of cattle are feeding where aircraft have taken off and landed in years past. And more are on their way into the feedlots.

(Feedstuffs also has learned of another custom feedlot set up at an old air base. It's at Pampa, Texas, and operated by Moody Farms, which currently is feeding out 6,000 head and anticipating doubling that number.)

Bank Manages Feedlots

K. J. Shaw, senior vice president of Southern National Bank, Laurinburg, says the old Laurinburg-Maxton air base, expanded during World War II to three main runways, each 6,500 ft. long and 150 ft. wide, "is the finest facility for feeding cattle in the U.S." Southern National Bank's farm service department manages the feedlots for the airport commission, which, until now, had been stymied as to what to do with more runway space than was needed for the relatively few private planes using the airport.

"I've felt for a long time that the base would make an ideal place for feeding cattle," Mr. Shaw says. "It was August of this year, however, before leases on the property could be worked out."

He reports that seven miles of fencing (woven and barbed wire) were erected around 1,000 of the base's 5,000 acres. Included in the enclosure is one of the three runways and other concrete areas formerly used for taxiing and parking aircraft. The concrete area enclosed adds up to something like 40 acres —enough for approximately 13,400 head, based on an allowance of 130 sq. ft. per animal.

In addition to the huge concrete area set aside for the feedlots, the enclosure includes land on which stand lush growths of bermuda grass and sericea lespedeza. This grassland, Mr. Shaw explained, will be used for grazing and to supplement concrete feedlot space.

Because available space is so ample, each animal will be provided as much or more soil area as concrete area—a total of more than 250 sq. ft.

100-Head Lots

Mr. Shaw explains that there are no definite plans as yet on how big the feeding operation will become. But he says "feedlots by the dozen will be possible." Only a small corner area of the enclosure—800 by 50 ft.—has been divided into 100-head lots.

The feed sub-contractor, Upchurch Milling, has the job of making the complete cattle ration being fed. This ration—basically composed of snapped ear corn, cottonseed oil meal, urea and additives—is manufactured at Raeford and hauled 20 miles in bulk trucks to the feedlot.

Mr. Shaw said both meal and pelleted feeds are being used. They are unloaded into self-feeders (Butler and Brower), each with a capacity of 6-7 tons and big enough to accommodate 80-120 head. Five self-feeders are in use now, and four or five more are to be added soon.

100-120 Days on Feed

The cattle which have been placed in the airport commission's feedlot by their owner, the meat packing company, weigh 550 to 700 lb. (650-lb. average). They'll be fed to 900-950 lb. in 100-120 days—then to the packing plant for slaughter.

Payment for the feeding service by the packing company is based on weight gain produced.

"Weather will be no problem," says Mr. Shaw. "Feed trucks will never have to drive on dirt." The use of covered self-feeders eliminates a possible weather problem, also. That's why the feeding operation has turned away from open bunks.

The air base has plenty of paved roads, electricity and an underground drainage system. "We have a 6-in. water main coming right up to our feedlots," Mr. Shaw notes, "and a railroad spur splits the feeding area."

He says manure will be removed from the feedlots and spread on the grass land within the 1,000-acre enclosure.

"I believe the feeding operation will aid this area's economy in two ways," he said. "First, it will provide cattlemen with a commercial feedlot like those found in the West, and second, it will provide a market for feed."

TOP OF THE HOPPER

(Continued from page 2)

AN EX-DIRECTOR of the Commodity Stabilization Service's grain branch talking: "Much has been said, in addition to the criticism of the decrease in storage rates, about the tightening up of the other provisions in the language of the Uniform Grain Storage Agreement. I fully realize that this has handicapped and scared the devil out of a lot of good warehousemen. It has also led them to believe the government has done all of this tightening up without just cause. I can personally testify that this is not the case. In every instance where the contract has had more teeth put in it, it was made necessary and done because some sharp operators or groups of operators in the warehouse industry had taken unfair advantage of the provisions of the old contract in some respect."

This comment was made at the Western convention by Raymond J. Pollock, who left the government post a few months back and has returned to operating an elevator at Norway, Iowa.

The FEED MARKET

PRICE QUOTATIONS, MARKET TRENDS
OF PRINCIPAL INGREDIENTS

NOTE: Quotations on feed ingredients shown in these and adjoining columns are wholesale prices, per ton, bulk, for prompt delivery, unless otherwise noted. They are the latest quotations available from Feedstuffs correspondents and are not necessarily those in effect on date of publication. The prices represent fair average trading values and do not necessarily represent extreme low or high levels at which individual sales might have occurred. A descriptive summary of supply and demand factors prevalent in the feed market appears on page 2.

A AND D FEEDING OIL

Boston: Demand and supply steady; 400 D, 3,000 A 19½¢ lb.; 300 D, 3,000 A 19¢; 300 D, 2,250 A 17½¢; 300 D, 1,500 A 16¢; 300 D, 750 A 14¢; 75 D, 750 A 13½¢.

Denver: Demand light; trend steady; supply ample; 21¢ lb.

Chicago: Demand fair; trend steady; supply ample; straight A feeding oil, with 10,000 units vitamin A per gram, 7@7½¢ a million units of vitamin A, l.c.l., packed in 55 gal. drums, f.o.b. Chicago, drums included.

Minneapolis: Demand fair; supply ample; 10,000 A 31¢ lb.; 300 D, 2,250 A 17½¢ lb.; 300 D, 1,500 A 16¢ lb.; 300 D, 750 A 15½¢ lb.

ALFALFA MEAL

Seattle: Demand fair; trend firm; supply good; 15% protein suncured $51, 150,000 A unit dehydrated $72, both delivered truck loads, sacked.

Portland: Demand good; trend mixed; supply limited; $47@72, sacked.

Omaha: Demand slow; trend steady; supply ample; 17% dehydrated, 100,000 A units, bulk pellets $45; sacked meal $50; Omaha basis.

Cincinnati: Demand fair; trend steady; supply adequate; 17% dehydrated, 100,000 vitamin A $56@57.

Los Angeles: Demand moderate; trend steady; supply adequate; dehydrated meal, 17% protein, 100,000 A $51.50@52; dehydrated pellet meal, 17% protein, 100,000 A $53@54; suncured meal, 15% protein $46@46; suncured crumbles, 15% protein $47@48.

Ft. Worth: Demand of dehydrated good, suncured fair; supply sufficient; sacked: dehydrated, 17%, 100,000 A $57.10, truck or rail; suncured: 13% ¼-in. grind No. 1 $48, truck; 15% fine ground, dry $50, with 2% fat added $52, rail or truck.

Boston: Demand and supply steady; dehydrated, 17% $61; suncured, 13% $51, sacked.

Memphis: Demand poor; trend steady; supply ample; dehydrated, 17% protein, guaranteed 100,000 units vitamin A $51.

Philadelphia: Demand slow; supply fair; 17% dehydrated $62.25.

Minneapolis: Prices continue unchanged; 17% dehydrated, 100,000 A units, reground pellets steady at $51, delivered Minneapolis; oiled reground pellets $53.

Chicago: Demand fair; trend easier; supply moderate; dehydrated, 17%, 100,000 units vitamin A $51.50.

St. Louis: Demand slow; trend firm; supply limited; suncured, 13% fine, sacked $48; dehydrated, 17%, 100,000 A pellets, demand fair, trend firm, supply ample, bulk $49.

Denver: Demand fair; trend steady; supply ample; $47.

Kansas City: Demand fair; trend steady; supply ample; 17% dehydrated alfalfa, 100,000 A on arrival, pellets $46@48, reground pellets $48@49; 15% dehydrated alfalfa, 125,000 A on arrival, pellets $48@51, reground pellets $49@53; 20% dehydrated alfalfa, 150,000 A on arrival, pellets $50@54, reground pellets $51@53; suncured alfalfa, demand improved, supply adequate, 13% pellets $35@37; No. 1 ¼-in. $40, sacked.

ANIMAL FAT (STABILIZED)

Salisbury, Md.: Demand excellent; supply limited; 5½¢ lb.

Ogden: Supply good; $5.50 cwt.

San Francisco: Demand fair; supply ample; bleachable fancy 6¾¢ lb.; yellow grease 4¾¢ lb.

Louisville: Demand fair to good; trend steady; supply good; white tallow 5¾¢ lb., bleachable white 6¢ lb., yellow grease 5½¢ lb., all in tankers.

Kansas City: Demand good; trend firm; supply available; stabilized prime tallow 5¾¢ lb.

Chicago: Demand good; trend irregular; supply fair; tank truck or carlots, bleachable fancy tallow $5.87½ cwt., yellow grease $5.

St. Paul: Demand good; supply ample; no change in price from last week, bleachable fancy 5¾¢ lb., f.o.b. producer's plant.

Ft. Worth: Demand good; supply sufficient; prime tallow, tank cars 5¾¢ lb.; drums 7¼¢ lb., f.o.b. north Texas packing plants with returnable drums.

Boston: Demand improved; supply adequate; tallow 6¢ lb.; yellow grease 5¢ lb.

Atlanta: Demand good; trend steady; supply ample; 5¢ lb., f.o.b. Alabama and Georgia processing plants.

BARLEY FEED

Baltimore: Demand quiet; trend lower; supply fair; $43.50, sacked.

Chicago: Demand fair; trend easier; supply ample; $33, sacked.

Denver: Demand good; trend steady; supply ample; pellets $2.10 bulk, $2.30 sacked.

Ogden: Supply normal; rolled $45@46; whole $40@41.

Portland: Demand slower; trend lower; supply ample; $44@44.50.

San Francisco: Demand fair; supply ample; rolled $58, ground $57.

Los Angeles: Demand slow; trend unchanged; supply adequate; standard rolled $3 cwt., standard ground $3 cwt., both sacked.

Boston: Demand fair; supply light; $46, sacked.

Philadelphia: Demand slow; supply fair; $41.25.

Seattle: Demand and supply good; trend steady; $45, truck lots.

BENTONITE (SODIUM)

Cincinnati: Demand steady; supply adequate; f.o.b. Cincinnati, minimum 30 ton carlots: $0 granular $31.50, less than carlots $40; 200 mesh fine $31, less than carlots $40.

Denver: Demand fair; trend steady; supply good; $24.50, delivered.

Chicago: Demand fair; supply ample; trend steady; f.o.b. Wyoming and South Dakota shipping points: 200 mesh $14 and net $13.75; fine granular (30 to 100 mesh) $14.25 and net $14; granular, 30 mesh $16.50 and net $16.25.

BLOOD MEAL

Chicago: Demand quiet; trend firm; supply fair; 50% $110, sacked.

San Francisco: Demand and supply fair; $4.75 a unit of ammonia, sacked.

Ogden: Supply ample; $80.

Portland: Demand fair; trend steady; supply adequate; $95@100, sacked.

Omaha: Demand and trend fair; supply plentiful; 50% $85, sacked, Omaha.

Los Angeles: Demand slow; trend steady; supply moderate; $5.50 a unit of ammonia, sacked.

BONE MEAL (STEAMED)

Seattle: Demand good; trend firm; supply limited; $92, f.o.b. car Seattle, sacked.

Chicago: Demand and supply fair; trend unchanged; $90.

Denver: Demand fair; trend steady; supply ample; $112.50.

Louisville: Demand fair; trend easy; supply good; $85@90, sacked.

San Francisco: Demand good; supply ample; $75, sacked.

Cincinnati: Demand good; trend firmer; supply fair; $90, sacked, Cincinnati.

Los Angeles: Demand fair; trend unchanged; supply limited; imported $80.75, 20 ton lots, sacked.

Ft. Worth: Demand good; supply sufficient $100, sacked, f.o.b. Ft. Worth, local manufacture.

Portland: Demand fair; supply ample; trend unchanged; $95@97.50, sacked.

Boston: Demand and supply steady; $100.

BREWERS DRIED GRAINS

Chicago: Demand good; trend steady; supply light; 26% protein $47@47.50.

St. Louis: Demand good; trend strong; supply limited; $50.

Cincinnati: Demand poor; trend steady; supply adequate; $53.

Boston: Demand active; supply spotty; 26% $60.

Ft. Worth: Demand moderate; supply limited; 26% protein $61.90, sacked.

San Francisco: Demand fair; supply ample; $51, sacked.

Los Angeles: Demand and trend steady; supply adequate; $51.

Philadelphia: Demand slow; supply fair; $60.

Buffalo: Demand fair; supply fair to poor; trend steady to higher; $61, Boston.

BREWERS DRIED YEAST

Seattle: Demand slow; trend steady; supply ample; $12 cwt., sacked.

Buffalo: Demand fair; supply ample; trend steady; $9.25 cwt.

Chicago: Demand fair; trend steady; supply ample; 9⅛@10¢ lb., carlots, sacked; 9⅛@12½¢ lb., l.c.l.

Milwaukee: Demand fair; trend steady; supply ample; 10½@12½¢ lb., ton lots, sacked.

St. Louis: Demand fair; trend firm; supply ample; 9⅛@10¢ lb., carlots, sacked; 10½¢ lb., ton lots; 11½¢ lb., less than ton lots.

Pittsburgh: Carlots 10¢ lb.; 5 ton lots 11¢ lb.; ton lots 11½¢ lb., all sacked.

New Orleans: Carlots 10¢ lb.; 5 ton lots 11¢ lb.; ton lots 11½¢ lb., all sacked.

New York: Carlots 9½¢ lb.; 10 ton lots 10¢ lb.; 5 ton lots 10½¢ lb., ton lots 11¢ lb., all sacked, f.o.b. New Jersey.

Denver: Demand fair; trend steady; supply good; 9¢ lb.

San Francisco: Demand fair; supply good; 10¢ lb., sacked.

Omaha: Demand slow; trend fair; supply plentiful; 10¢ lb.

Portland: Demand slow; trend steady; supply ample; 11@12¢ lb.

Louisville: Demand slow; supply good; 10@10½¢ lb., sacked.

Cincinnati: Carlots 11¢ lb.; 5 ton lots 11¢ lb.; ton lots 11½¢ lb.

Los Angeles: Demand good; trend unchanged; supply limited; 10¢ lb., 5 ton lots; 11¢ lb., 1 ton lots; 12¢ lb., less than ton lots; all sacked.

Boston: Demand and supply steady; 11¢ lb.

BUTTERMILK (CONDENSED)

Boston: Demand and supply steady; 4¼¢ lb.

San Francisco: Demand fair; supply good; $5 cwt., drums.

Ogden: Supply average; $4.40 cwt., drum.

Los Angeles: Demand slow; trend unchanged; supply adequate; 5½¢ lb., 100 lb. lots; 4½¢ lb., 500 lb. lots; both in barrels.

Louisville: Demand very little; trend steady; supply light; $4.25 cwt., in paper drums.

Philadelphia: Demand slow; supply fair; $4.25 cwt.

Chicago: Demand and supply fair; trend firm; 500 lb. barrels $3.25@3.50 cwt.

CALCITE CRYSTALS AND FLOUR

(All prices net, sacked, including freight)

New York: Crystals $16.28, flour $10.28.
Buffalo: Crystals $17.11, flour $11.11.
Toledo: Crystals $18.96, flour $12.96.
Boston: Crystals $17.63, flour $11.63.
Lime Crest, N.J.: Crystals $11.50, flour $5.50.

CALCIUM CARBONATE

Seattle: Demand and trend steady; supply good; $14, ex-warehouse, sacked.

Cincinnati: Demand fair; trend steady; supply adequate; $7@7.50 cwt.

Los Angeles: Demand fair; trend steady; supply adequate; flour $10.15, 20 ton cars; meal $11.15, 20 ton cars; both sacked.

Chicago: Demand fair; trend steady; supply ample; fine grind, plain, 100 lb. bags $9.54; bulk, in hopper cars $7.54; bulk, in boxcars $8.04; granular grind $1 premium.

Minneapolis: Fine grind, 50 lb. bags $12.75; 100 lb. bags $12; bulk, boxcar $10.50; bulk, hopper $10; coarse grind $1 premium, delivered Minneapolis.

CHARCOAL

Los Angeles: Demand good; trend unchanged; supply adequate; hardwood poultry: $156, less than ton lots; $144.40, ton lots; both sacked.

San Francisco: Demand steady; supply ample; $141, sacked.

Boston: Demand slow; supply light; granular No. 6 $110.

Chicago: Demand fair; trend firm; supply fair; 50 lb. multiwalls $110.

COCONUT OIL MEAL

Los Angeles: Demand moderate; trend unchanged; supply ample; copra cake $63.

Portland: Demand slow; supply ample; trend unchanged; $66.20, sacked.

San Francisco: Demand fair; supply ample; solvent $52, expeller $69.

Seattle: Demand fair; trend steady; supply ample; solvent type $68, f.o.b. car Seattle, sacked.

COD LIVER OIL (FORTIFIED)

Boston: Demand and supply steady; 300 D, 3,000 A 20¢ lb.; 600 D, 2,250 A 18½¢; 300 D, 2,250 A 18¢; 600 D, 1,500 A 17¢; 300 D, 1,500 A 16½¢.

CONDENSED FISH SOLUBLES

Los Angeles: Demand and trend steady; supply adequate; 2¢ lb.

Boston: Demand quiet; supply ample; $37.50@40 in ton lots.

Denver: Demand fair; trend steady; supply good; 3¢ lb., West Coast.

CORN GLUTEN FEED AND MEAL

(All quotations for all cities are bulk basis, sacked basis $5 more)

Minneapolis: Feed $45.60, meal $62.60.
Atlanta: Feed $49, meal $66.
Birmingham: Feed $47.60, meal $64.60.
Boston: Feed $50.50, meal $67.50.
Chicago: Feed $39, meal $56.
Cleveland: Feed $46.90, meal $63.90.
Denver: Feed $49.20, meal $66.20.
Ft. Worth: Feed $47.70, meal $64.70.
Indianapolis: Feed $44.20, meal $61.20.
Kansas City: Feed $39, meal $56.
Louisville: Feed $46.60, meal $62.60.
New Orleans: Feed $48.90, meal $65.90.
New York: Feed $50.10, meal $67.10.
Norfolk: Feed $49.50, meal $66.50.
Philadelphia: Feed $49.70, meal $66.70.
St. Louis: Feed $39, meal $56.

CORN OIL MEAL

Louisville: Demand dull; trend steady; supply light; $53.55, sacked.

Cincinnati: Demand fair; trend steady; supply adequate; $45.

Seattle: Demand good; trend steady; supply ample; $49.50, car or truck.

COTTONSEED OIL MEAL

Chicago: Demand fair; trend easier; supply fair; Memphis basis, hydraulic $53.

Denver: Demand good; trend steady; supply ample; $59.

Kansas City: Demand slow; trend steady; supply ample; 41% old process $52.50@53; solvent process $49@49.50, Memphis.

St. Louis: Demand slow; trend steady; supply ample; solvent $53.

Boston: Demand slow; supply light; 41% $70.70, sacked.

Seattle: Demand fair; trend steady; supply ample; $66, f.o.b. car Seattle.

Buffalo: Demand poor; supply fair; trend steady; $74, sacked, Boston.

San Francisco: Demand fair; supply ample; 41% $67, 44% $68.

Omaha: Demand fair; trend firm; supply ample; 41% solvent $64, delivered Omaha.

Ogden: Supply normal; 41% $63@65.

Portland: Demand moderate; supply ample; trend steady; $61.20, sacked.

Wichita: Demand fair; supply ample; 41% old process $68.50, sacked.

Louisville: Demand slow; trend steady; supply normal; old process $61.60, new process $58.60, both sacked.

Cincinnati: Demand poor; trend steady; supply adequate; $57.

Memphis: Demand fair; trend steady; supply ample; prime 41% protein, old process $52, new process, 41% solvent $49.

Los Angeles: Demand very slow; trend unchanged; supply ample; $54.

Ft. Worth: Demand good; supply sufficient; 41% old process $61, f.o.b. mills Ft. Worth; carlots, solvent, 2% fat added, $56.50 December, delivered Ft. Worth; pellets $2 additional; hulls $19.

Philadelphia: Demand slow; supply fair; $65.50.

Atlanta: Demand fair; trend steady; supply good; 41% $56 Georgia, South Carolina, North Carolina, $55 north Alabama, $53 Mississippi and Tennessee producing mills.

CURACAO PHOSPHATE

New York: Minimum 14% phosphorus $46.50 sacked, $43.50 bulk, f.o.b. New Orleans, Jacksonville and Philadelphia.

D ACTIVATED ANIMAL STEROL (POWDERED)

Kansas City: Demand fair; trend steady; supply ample; 1,500 ICU 9¾¢ lb.; 3,000 ICU 11¢ lb.

Cincinnati: Demand fair; trend steady; supply ample; 1,500 ICU 11@12¢ lb.; 3,000 ICU 20¢ lb., warehouse.

D ACTIVATED PLANT STEROL (POWDERED)

Chicago: Demand fair; supply ample; 4,000,000 U.S.P. units per lb., 15¢ lb. in ton lots, less than ton lots 17¢ lb.; 12,000,000 units per lb., 5 tons to a carload 28¢ lb., ton lots and less 30¢ lb.

DEFLUORINATED PHOSPHATE

Coronet, Fla.: Minimum phosphorus 18%, minimum calcium 31%, maximum calcium 34%, maximum fluorine .18%; guaranteed uniform analysis; carload $66.25, sacked, 100 lb. multiwall bags, bulk $63.25; truck load $67, sacked, in 100 lb. multiwall bags, bulk $64, f.o.b. Coronet, Fla.

Tupelo, Miss.: Minimum phosphorus 14%, minimum calcium 28%, maximum fluorine .14% $57.07, f.o.b. Tupelo in 100 lb. multiwall bags, $54.07 bulk.

Wales, Tenn.: Minimum phosphorus 18%, minimum calcium 32%, maximum 36%, maximum fluorine .18% $71.50 (or $3.99 per unit of P), f.o.b. Wales in 100 lb. multiwall bags, $3 less in bulk.

Butte, Mont.: Minimum phosphorus 18%, minimum calcium 32%, maximum calcium 36%, maximum fluorine .18%, $81 (or $4.50 per unit of P), f.o.b. Butte, 100 lb. multiwall bags; bulk $78; truck lots of less than 10 tons $10 more, bagged or bulk.

Houston: Minimum phosphorus 19%, minimum calcium 32%, maximum calcium 35%, maximum fluorine .19% $74.35 net ton, f.o.b. Houston, 100 lb. multiwall bags; $71.35 bulk.

Portland: Demand fair; supply ample; trend unchanged; $93.50@95 for product carrying a minimum of 18% phosphorus, 31.5% calcium and a maximum of 0.1% fluorine; $92@93.50 dock for a minimum of 10 ton lots.

Cincinnati: 18% phosphorus $81.02; 14% phosphorus $71.03, f.o.b. Cincinnati.

DICALCIUM PHOSPHATE

Cincinnati: 18½% phosphorus $92.15, f.o.b. Cincinnati.

Trenton, Mich.: 18½% P $33, bulk, boxcar/hopper car; $36, bagged, in carloads or truck loads; $96 bagged, in less than carload lots; 21% P, $94.65, bulk, boxcar/hopper car; $97.65, bagged, in carloads or truck loads; $107.65, bagged, less than carload; all prices f.o.b. Trenton, freight equalized with nearest producing point.

Chicago: Bulk 18.5% phosphorus, carlots or trucks $33; 20,000 lb. or more $36 net ton in 100 lb. papers; less than 20,000 lb. $96, basis Chicago Heights, Ill., or Nashville, Tenn.; 21% phosphorus, carlots or trucks, bulk $94.65; 20,000 lb. or more, per net ton in 100 lb. papers, $97.65 and less than 20,000 lb., $107.65, basis Chicago Heights, Ill., or Nashville, Tenn.

Bonnie, Fla.: Minimum phosphorus 18½% granular, $36 (or $4.65 unit of P), freight equalized from nearest producing point, carload basis; bulk carloads $3 less; in truck loads of less than 10 tons, $10 more. Western slope prices, for delivery at established railroad stations and by truck at regular feed mixing plants: California, Arizona, Nevada and Utah, $99.90; Washington, Oregon, Montana and Idaho, $107.15; bulk carloads $3 less; truck loads less than 10 tons, $10 more.

Columbia, Tenn.: Minimum phosphorus 18.5%, minimum calcium 24% $36, f.o.b. Columbia, in 100 lb. multiwall bags; freight equalized with nearest producing point, carload basis; bulk $3 ton less.

Texas City, Texas: Minimum phosphorus 18.5%, minimum calcium 20%, maximum calcium 23%, maximum fluorine .12%; carload and truck load $80.50, sacked in 100 lb. multiwall bags, bulk $77.50, f.o.b. Texas City.

Denver: Demand good; trend steady; supply ample; $93.50, delivered, truck.

DISTILLERS DRIED GRAINS

Louisville: Demand good; trend strong; supply light; bourbon grains for December: light $60@61, dark $61@62, solubles $73, all sacked.

San Francisco: Demand fair; supply ample; solubles $79, sacked.

Cincinnati: Demand fair; trend steady; supply adequate; $62.

Boston: Demand active; supply extremely tight; dark $67, nominal; light $66, nominal.

Philadelphia: Demand slow; supply very light; dark $67.

Seattle: Demand fair; trend firm; none available; $69, delivered truck lots, sacked.

Buffalo: Demand good; supply fair to poor; trend steady; $65, Boston.

DRIED BEET PULP

Ft. Worth: Demand slow; supply sufficient; plain $59.25, sacked, 50 lb. bags, first half December.

San Francisco: Demand good; supply fair; $44.80.

Ogden: Supply good; $39@45.

Portland: Demand dependable; supply ample; trend steady; $47.50, sacked.

Los Angeles: Demand slow; trend steady; supply moderate; $49.90.

Boston: Demand fair; supply light; $58, sacked.

Denver: Demand fair; trend steady; sup-

ply good; $62.50, f.o.b.

Seattle: Demand good; trend steady; supply ample; $49, delivered carlots, sacked.

Buffalo: Demand and supply fair; trend steady to lower; $67.10, sacked, Boston.

Atlanta: Demand fair; trend steady; supply limited; $60.11, sacked, delivered.

DRIED BUTTERMILK

Los Angeles: Demand fair; trend steady; supply ample; 13¾@14¢ lb., sacked.

San Francisco: Demand fair; supply ample; 13½¢ lb., sacked.

Louisville: Demand dull; trend steady; supply light; 13@13½¢ lb., sacked.

Ogden: Supply ample; $17.25 cwt.

Boston: Demand light; supply short; 14¢ lb.

Chicago: Demand and supply fair; trend firm; medium acid $11.50@12 cwt., sweet cream $11.50@12 cwt., both sacked.

Buffalo: Demand good; supply limited; trend steady; $12.75 cwt.

DRIED CITRUS PULP

San Francisco: Demand and supply fair; meal $48, sacked.

Los Angeles: None available; no quotations.

Boston: Demand good; supply tight; new crop $47.50, f.o.b. Florida, sacked.

Buffalo: Too scarce to quote.

Atlanta: Demand good; trend steady; supply limited; pulp $47.50, sacked, f.o.b. producing plant; meal $42.50, sacked, f.o.b.

DRIED SKIM MILK

Buffalo: Demand and supply fair; trend steady; $13.35 cwt.

Boston: Demand active; supply short; 12¼@13¢ lb.

Los Angeles: Demand slow; trend unchanged; supply adequate; 15¢ lb., less than ton lots; 14¾¢ lb., ton lots.

San Francisco: Demand and supply fair; 14½¢ lb., sacked.

Louisville: Demand dull; trend steady; supply light; 12@13¢ lb., sacked.

Ogden: Supply normal; $15.15 cwt., sacked.

Omaha: Demand and trend strong; supply short; 12¢ lb.

Cincinnati: Demand fair; trend steady; supply adequate; 12@13¢ lb., sacked.

Philadelphia: Demand slow; supply fair; $13 cwt.

Chicago: Demand slow; trend steady; supply ample; $11.75@12.25 cwt., sacked.

Minneapolis: Steady market; demand good; supply tight; still $12.25@12.50 cwt.

DRIED WHEY

Seattle: Demand steady; trend easy; supply good; $5.85 cwt., ex-warehouse, l.c.l.

Omaha: Demand good; trend fair; supply plentiful; $5.50 cwt.

Portland: Demand fair; supply ample; trend steady; $5.60 cwt., sacked.

Ogden: Supply ample; $6.90 cwt., sacked.

Louisville: Demand dull; trend steady; supply light; 6@6½¢ lb., sacked.

Cincinnati: Demand fair; trend steady; supply adequate; $5.75 cwt., sacked.

San Francisco: Demand steady; supply good; $5.25 cwt., sacked.

Los Angeles: Demand fair; trend steady; supply adequate; $5.18 cwt., carloads; $5.35 cwt., l.c.l.; both sacked.

Ft. Worth: Demand fair; supply adequate; carlots, standard $5.25, sacked, delivered Ft. Worth; ton lots $5.50, f.o.b. warehouse Ft. Worth.

Boston: Demand good; supply fair; 5¼@5½¢ lb.

Philadelphia: Demand slow; supply fair; $6.25 cwt.

Minneapolis: No change from last week; $5.50 cwt.

Kansas City: Demand fair; trend steady; supply adequate; regular or partially delactosed $5.25 cwt., sacked.

Chicago: Demand slow; trend steady; supply fair; $4.85 cwt., sacked.

Denver: Demand fair; trend steady; supply ample; $5.30, delivered.

FEATHER MEAL (HYDROLYZED)

Los Angeles: Demand and trend steady; supply adequate; 90¢ a unit of protein, sacked.

Ft. Worth: Demand slow; trend lower; supply plentiful; 85% protein $60 bulk, $62.50 sacked, delivered Ft. Worth.

Boston: Demand slow; supply ample; $65, f.o.b. shipping point.

Salisbury, Md.: Demand spotty; supply excess; $62, f.o.b.

Atlanta: Demand fair; trend steady; supply good; $62, f.o.b. Alabama and Georgia processing plants.

FISH MEAL

Ft. Worth: Demand fair; supply sufficient; sacked: 65% protein Peruvian $93.50, December; 60% protein menhaden $99, delivered Ft. Worth.

Portland: Demand fair; supply improved; trend unchanged; $1.50 a protein unit, sacked.

Louisville: Demand slow; trend steady; supply light; $110, sacked.

Omaha: Demand good; trend stronger; supply plentiful; 60% menhaden $110, f.o.b. Omaha.

San Francisco: Demand slow; supply ample; $1.40 a unit of protein.

Cincinnati: Demand fair; trend steady; supply adequate; $108.60.

Los Angeles: Demand slow; trend easier; supply adequate; local production, 60% protein $1.45@1.50 a unit, sacked.

Ogden: Supply normal; $1.05 a unit, f.o.b. Coast; 65% $105@108.

Boston: Demand good; supply spotty; 60% $90@92.

Seattle: Demand and supply good; trend weak; $1.50 a unit protein, f.o.b. truck, Vancouver, B.C. (Canadian production).

Denver: Demand good; trend steady; supply tight; $1.60 a protein unit, f.o.b. Vancouver.

Chicago: Demand poor; supply ample; trend easier; sacked: menhaden, East Coast $88@90, Gulf $86@90; menhaden scrap, East Coast $84@86, Gulf $82@86; Canadian herring meal $1.55 a unit of protein.

Atlanta: Demand fair; trend steady; supply spotty; 60% menhaden $90@92, sacked, f.o.b. Atlantic and Gulf ports.

HAY

Seattle: Demand fair; trend firm; supply fair; alfalfa U.S. No. 2 green $36, delivered truck lots, baled.

Ogden: Supply normal; $25 ton in the barn.

Portland: Demand improved; trend firm; supply ample; No. 2 green alfalfa $32@36, baled, Portland-Seattle.

Wichita: Demand good; supply sufficient; prairie $22@25, alfalfa $28@30, baled.

Louisville: Demand slow; trend steady; supply good; **No. 1 hay**, any variety domestic or local $28@30, No. 2 $26@28; straw, any variety $12@13.

Cincinnati: Demand good; trend steady; supply adequate; No. 1 timothy $30, No. 2 timothy $27; No. 1 red clover $32; clover mixed with straw $25.

Los Angeles: Demand slow; trend unchanged; supply adequate; U.S. No. 1 $33@35; U.S. No. 3 leafy $29.50@31; U.S. No. 2 green $31@32; U.S. No. 2 $27@28.

Ft. Worth: Demand fair for alfalfa, practically nil for others; supply sufficient; carlots, baled, No. 1 alfalfa $42@44, No. 2 $40@42; No. 2 prairie, nominal $30@32; No. 2 Johnson, nominal $28@30, delivered Texas common points.

Boston: Demand fair; supply adequate; No. 2 timothy $39@42.

Philadelphia: Demand slow; supply light; $25.50.

HOMINY FEED

Memphis: Demand nil; trend steady; supply ample; white $42.50, yellow $42.50.

Louisville: Demand dull; trend stronger; supply good; $45, sacked.

Cincinnati: Demand poor; trend higher; supply fair; $40.

Boston: Demand improved; supply adequate; $47.50@48.50.

Buffalo: Demand and supply fair; trend steady to higher; $48.50, sacked, Boston.

Seattle: Demand good; trend easy; supply limited; $49, delivered carlots, sacked.

Kansas City: Demand fair; trend steady; supply scarce; white or yellow $32.50@33.

St. Louis: Demand fair; trend easy; supply ample; yellow $38.

Chicago: Demand improved; trend sharply higher; supply fair; $39.

LINSEED OIL MEAL

Ft. Worth: Demand slow; supply sufficient; 34% protein, solvent $69, December.

Louisville: Demand slow; trend stronger; supply good; old process $76.90, new process $71.90, both sacked.

Cincinnati: Demand poor; trend steady; supply adequate; new process $52.50, old process $53.50, Minneapolis.

Philadelphia: Demand fair; supply light; 34% $70.

Wichita: Demand fair; supply ample; 34% $75, sacked.

Portland: Demand softer; trend slow; supply ample; $53.50, sacked.

Omaha: Demand fair; trend steady; supply ample; 34% solvent $57.50; 32% old process $63, Omaha basis.

Los Angeles: Demand slow; trend unchanged; supply small but adequate; local production, 31% protein $71.

San Francisco: Demand fair; supply ample; $70.

Boston: Demand slow; supply light; $68.70.

Seattle: Demand fair; trend steady; supply good; 34% protein (Montana) $86, delivered carloads, sacked.

Denver: Demand fair; trend steady; supply ample; $71, sacked, Denver.

Kansas City: Demand fair; trend steady; supply sufficient; solvent process $52.50@53; old process $57.50@58, Minneapolis.

Chicago: Demand good; trend steady to slightly higher; supply fair; Minneapolis basis: solvent $52.50, expeller $58.50.

Minneapolis: Stronger market indicated; December solvent $53, December expeller $59.

LIVER AND GLANDULAR MEAL

Omaha: Demand slow; trend fair; supply plentiful; 65% $160, sacked, Omaha.

MALT SPROUTS

Boston: Demand and supply limited; $48, nominal.

Cincinnati: Demand fair; trend steady; supply adequate; No. 1 $43.

Chicago: Demand good; trend higher; supply light; No. 1 uneven bags $43, sacked.

MEAT AND BONE MEAL

Louisville: Demand and supply good; trend steady; $70@75, sacked.

Ogden: Supply good; 50% protein $70, sacked.

Cincinnati: Demand good; trend steady; supply ample; 50% meat and bone scrape $66, Cincinnati.

Omaha: Demand good; trend improving; supply plentiful; $70.

Wichita: Demand heavy; supply about offsets demand; 50% $80, sacked, f.o.b. plant.

Portland: Demand good; trend steady; supply adequate; $72.50, sacked.

San Francisco: Demand fair; supply ample; $1.40 a unit of protein.

Ft. Worth: Demand fair; supply sufficient; meat and bone, 50% $62@64 bulk, $67 sacked, f.o.b. Ft. Worth.

Los Angeles: Demand slow; trend unchanged; supply ample; 50% protein $1.40 a unit.

Boston: Demand and supply steady; $1 a protein unit; converted, 50% $62.50.

St. Paul: No change from last week, but expected demand improvement may change position soon; $68@72.

Seattle: Demand good; trend firm; supply ample; $1.50 a unit protein, ex-processing plant, sacked.

Chicago: Demand slow; trend steady; supply fair; 50% $72.50, sacked.

St. Louis: Demand fair; trend firm; supply ample; $66.

Kansas City: Demand fair; trend steady; supply ample; 50% $66.

Denver: Demand fair; trend steady; supply good; $62.50.

MILLFEED

Minneapolis: Demand better; supplies down; bran up $1.50 from last week to $39, sacked; middlings up $2.50@3 to $37.50@38; red dog up $3 to $41.

Kansas City: Demand fairly good; trend strong; supply available; sacked bran $35.50@36, shorts $34.50@35; bulk bran $30@30.50, shorts $31@31.50, middlings $31@31.50.

Wichita: Demand fair to good; supply adequate; Nov. 28, basis Kansas City: bran $34.75@35.25, shorts $33.75@34.25, sacked; prices unchanged, compared with the preceding week; bulk middlings $28@28.50, up 50¢ on a fair demand.

Ft. Worth: Demand good; offerings sufficient; bran bulk $39, burlaps $43; gray shorts bulk $39.50, burlaps $43; bulk middlings $38.50, delivered Texas common points; bran unchanged, shorts 50¢@$1 higher, middlings unchanged, compared with previous week.

Chicago: Demand improved; trend higher; supply fair; standard bran $35, standard midds. $36.50, red dog $41.

St. Louis: Sacked bran $40.50, shorts $39.50; bulk bran $36, middlings $35.

Omaha: Demand good; trend firm; supply tight; sacked bran $36; sacked gray shorts $35; bulk standard midds. $31, all Omaha basis.

Cincinnati: Demand fair; trend steady; supply adequate; bran $39, middlings $40.

Boston: Demand cautious; supply light; bran $45.50, middlings $46.

Buffalo: Bran and middlings advanced $1.50 in wake of season's first blizzard; could back down if clogged roads prevent country trade activity and add to the supply situation; manufacturers are not chasing after supplies and could elect to ride out of their four to five week inventories; local levels even to within 50¢ of all competition; sacked differential on bran and middlings steady at $5.50, bulk and sacked bran and middlings ended up $2 from a week ago; red dog unchanged to $1 higher; quotations Nov. 30: bulk bran $37@38, sacked $42.50@43.50; bulk middlings $39@39.50, sacked $44.50@45; bulk red dog $44@46, sacked $44@45.

Philadelphia: Demand slow; trend unsettled; supply fair; bran $44, standard midds. $46, red dog $49.

Memphis: Demand good; trend higher; supply fair; wheat bran $29, gray shorts $30, standard midds. $30.

Louisville: Demand fair; trend steady; supply good; bran $44.80, mixed feed $44.30, shorts $45.30, all off $3@4, all sacked.

Denver: Demand fair; trend strong; supply limited; shorts $37.75, bran $38.75, millrun $36.25.

Seattle: Demand fair; trend easy; supply ample; $37, delivered common transit points, carlots.

Portland: Demand improved; supply tightly held; trend steady; $36@37, sacked.

Ogden: Supply good; to Utah: red bran and mill run $38, middlings $43.

Los Angeles: Standard millrun $46@47, slow demand, steady trend, supplies not too plentiful; red bran $49@50, slow demand, firmer trend, adequate supplies.

San Francisco: Demand good; supply fair; millfeed $46.50, red bran $49.

MINERAL FEED

Ogden: Supply good; $113 ton in 50 lb. blocks; $103 ton, granular, 50 lb. bags.

Portland: Demand fair; supply adequate; trend unchanged; $44@45, sacked.

Wichita: Demand heavy; supply sufficient; all-purpose with iodine, 50 lb. blocks $97.50, 100 lb. bags $92.50, f.o.b. plant.

San Francisco: Demand steady; supply good; all-purpose with iodine $70, sacked.

Ft. Worth: Demand fair; supply adequate; all-purpose granules $90, block $70; mineral phosphorus 5% granules $106, block $113; cattle-sheep mineral 7% phosphorus granules $100, block $107; hog mineral phosphorus 3¼% granules at $87, phosphorus 2% $77 (all in 50 lb. paper bags).

Sioux City: 50 lb. mineral blocks 8.2% phosphorus $92; 7.6% phenothiazine sheep mineral blocks $4 each.

Seattle: Demand fair; trend steady; supply good; mixer mineral $48, all-purpose mineral $85, both ex-warehouse, sacked.

MOLASSES

Ft. Worth: Demand good; supply sufficient; blackstrap 13¼¢ gal., f.o.b. Houston, delivered Ft. Worth truck $29.36, seller's market price on date of shipment.

Los Angeles: Demand good; trend steady; supply adequate; $22.50, f.o.b. tank cars; $22.75, f.o.b. tank trucks.

Memphis: Demand fair to better; trend steady; supply ample; blackstrap 13¢ gal., tank car, f.o.b. New Orleans, and $28 ton delivered Memphis, truck.

San Francisco: Demand and supply good; $24.50, f.o.b. cars Richmond, Cal.

Louisville: Demand slow; trend steady; supply normal; 13¢ gal., tank car lots, f.o.b. Gulf ports.

Cincinnati: Demand fair; trend steady; supply adequate; 13¢ gal., New Orleans.

Boston: Demand and supply seasonally steady; 14¢ gal. in tank cars.

Buffalo: Demand fair to good; supply fair; trend steady to higher 15¢ gal., Boston.

Seattle: Demand and supply good; trend firm; $24.75, f.o.b. Seattle, tank truck lots.

Minneapolis: Stronger market developing; blackstrap up $1 from last week to $33, tank truck, delivered; beet up $1 to $30; blend up $1 to $31.50.

St. Louis: Demand fair; trend steady; supply ample; 13½¢ gal., tank cars, New Orleans.

Kansas City: Demand fair; trend firm; supply tight; blackstrap 13¢ gal., f.o.b. New Orleans.

Denver: Demand fair; trend steady; supply good; 12½¢ gal., New Orleans; $36.57 ton, Denver.

Atlanta: Demand good; trend steady; supply limited; citrus $20, f.o.b. Florida producing plants.

OAT PRODUCTS

Ft. Worth: Demand slow; supply sufficient; 10% protein oat millfeed $43.20; reground $29.80, sacked.

Memphis: Demand fair; trend steady; supply short; 3½% protein, reground oat feed $30.

Louisville: Demand slow; trend stronger; supply normal; reground $29.40, rolled $78.90, feeding $74.40; pulverized $49.90, crimped $63.40, all sacked.

Cincinnati: Demand poor; trend steady; supply adequate; pulverized white oats $44@49.

Los Angeles: Demand slow; trend unchanged; supply adequate; local production, pulverized $67, sacked.

Boston: Demand slow; supply spotty; white pulverized $54.50, reground oat feed $26.50@26.50, both sacked.

Philadelphia: Pulverized white, demand slow, supply fair $46.50; domestic, demand slow, supply light $38.50; Canadian oat feed, demand fair, supply very light $35, sacked, nominal.

Chicago: Demand fair; trend steady; supply adequate; reground oat feed $20; No. 1 fine ground feeding oatmeal $70; feeding rolled oats $74.

Minneapolis: Stronger market compared with week ago, mostly up $1; rolled up $1 to $72, sacked; feeding oatmeal steady at $61.50, sacked; pulverized up $1 to $41, sacked; crimped up $1 to $55, sacked; reground supply short, nominal $24, sacked.

OYSTER SHELL

San Francisco: Demand fair; supply ample; local $15, eastern $26, sacked.

Portland: Demand fair; trend steady; supply adequate; $27.50@35, sacked.

Louisville: Demand improving; supply good; trend steady; in 80 lb. bags $23.95, in 50 lb. bags $24.20, in 25 lb. bags $26.45.

Cincinnati: Demand fair; trend steady; supply adequate; 80 lb. bags $23.85, 50 lb. bags $24.10, 25 lb. bags $26.35.

Los Angeles: Demand fair; trend unchanged; supply adequate; $15.40, sacked.

Boston: Demand and supply steady; in paper $26.53.

Seattle: Demand and trend steady; supply good; eastern $26, delivered carlots, sacked.

PEANUT OIL MEAL

Atlanta: Demand fair; trend steady; supply limited; 45% $57 for expeller, $51 for solvent, f.o.b. Alabama and Georgia producing mills.

PEAT MOSS

Seattle: Demand poor; trend steady; supply good; $2.60 a bale, delivered truck lots.

Boston: Demand and supply steady; $3.15 a bale.

Chicago: Demand and supply fair; trend firm; standard 7⅛ cu. ft bale $3.80.

Cincinnati: Demand and supply good; trend steady; truck loads $3.45 a bale, f.o.b. Cincinnati.

Los Angeles: Demand fair; trend unchanged; supply adequate; Canadian 5.6 cu. ft. bales $2.65.

Portland: Demand sluggish; trend barely steady; supply ample; $3@3.15 a 5.6 cu. ft. bale.

San Francisco: Demand and supply fair; $3.65 a bale.

Philadelphia: Demand slow; supply fair; $2.85 a bale, f.o.b. pier.

POTASSIUM IODIDE (U.S.P.)

Chittenango, N.Y.: Demand good; trend firm; supply adequate; standard trace mineral blends: 90% U.S.P. K.I. and 10% calcium stearate, magnesium carbonate or calcium hydroxide: 100 lb. drums $1.42 lb.; 200 lb. and up $1.40 lb.; delivered basis.

Cincinnati: Demand good; trend steady; 90% KI in calcium stearate or carbonate mixtures: 250 lb. drums $1.35, 200 lb. in 100 lb. drums $1.35, 100 lb. drums $1.38, 25 lb. drums $1.41, f.o.b. Cincinnati.

POULTRY BY-PRODUCTS

Los Angeles: Demand and trend steady; supply adequate; $1.20 a unit of protein, sacked.

Boston: Demand fair; supply ample; $70, f.o.b. shipping point.

Salisbury, Md.: Meal demand good; supply ample; $67, f.o.b.

Atlanta: Demand good; trend steady; supply limited; meat meal $64, f.o.b. Alabama and Georgia processing plants.

RIBOFLAVIN

Cincinnati: Trend steady; feed grade (in feed supplements) 4¢ gm. in less than ton lots in 3.36 to 16 gm./lb. mixtures; 3¢ in ton lots or more, freight prepaid to destination.

RICE BY-PRODUCTS

Los Angeles: Demand slow; trend unchanged; supply adequate; California pro-

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duction, high fat content, bran $49@50, sacked.

San Francisco: Demand good; supply ample; bran $40, sacked.

Ft. Worth: Demand good; supply moderate; rice bran $34@35, f.o.b. south Texas rice mills, sacked; hulls $4.50, sacked.

Atlanta: Demand good; trend steady; supply limited; bran $42.50, sacked, delivered.

SCREENINGS

Minneapolis: Demand showing improvement; supplies still tight; prices steady, but increases may be ahead; Canadian steady at $23; domestic lights $6@15, mediums $13@20, heavies $21@30; 15% flax screenings holding at $35.

Chicago: Demand slow; trend firm; supply fair; ground grain $32.50, Canadian $26.

Cincinnati: Demand good; trend steady; supply tight; unground grain screenings $24@26.50.

Buffalo: Demand fair; supply adequate; trend steady to lower; ground, sacked $35.75; bulk, unground $28.50, New York.

SOFT PHOSPHATE

(Sacked, delivered)

Atlanta: $30.65.
Buffalo: $25.50.
Chicago: $24.96.
Cincinnati: $23.64.
Des Moines: $25.42.
Kansas City: $26.07.
Memphis: $22.28.
Minneapolis: $26.12.
Philadelphia: $24.51.
St. Louis: $24.32.

SORGHUMS

Ogden: Supply good; milo $40@41.

Los Angeles: Demand steady; trend little firmer; supply ample; milo $2.05 cwt.

Ft. Worth: Demand fair; supply sufficient; No. 2 yellow milo $1.87@1.88 cwt., delivered Texas common points.

Seattle: Demand and supply good; trend steady; $43, delivered carlots.

SOYBEAN OIL MEAL

Denver: Demand fair; trend steady; supply ample; 44% $58.50.

Kansas City: Demand fair; trend stronger; supply ample; 41% solvent process $43 @43.50, Decatur.

St. Louis: Demand good; trend firmer; supply ample; 44% $49.

Chicago: Demand better; trend higher; supply ample; Decatur basis: 44%, unrestricted billing $45.50@46.50, ETL $42.50; 50%, unrestricted billing $49.50@50, ETL $47.50.

Minneapolis: Price decline halted and turned around; 44% $40, prompt, Decatur, up $1.50@2 better than week earlier; 50% $44.50, prompt, Decatur, up $1.50.

Los Angeles: Demand slow; trend firmer; supply ample; $66.60@67.10.

Ft. Worth: Demand good; supply sufficient; 44% $53.20@54.80 December, $55.20 @56.80 January; 50% $59@61 December, $61@63 January.

Wichita: Demand good; supply ample; 44% $59, 50% $64, sacked; 44% $55, 50% $60 bulk, f.o.b. Wichita.

Boston: Demand improved; supply adequate; 44% $40.50@41; 50% $46@46.50; both f.o.b. Decatur.

Memphis: Demand fair; trend steady; supply ample; prime 44% solvent $43, f.o.b. Memphis.

Ogden: Supply normal; 41% protein $67 @68; 50% protein $72@73.

Louisville: Demand fair; trend steady; supply good; $55.50, sacked.

Portland: Demand moderate; supply adequate; trend steady; $66.10.

Omaha: Demand good; trend firm; supply tight; 44% $43, delivered Omaha.

San Francisco: Demand fair; supply ample; $65.55.

Cincinnati: Demand poor; trend steady; supply adequate; $43, Decatur.

Philadelphia: Demand and supply fair; 44% $41.50, Decatur.

Seattle: Demand good; trend easy; supply ample; $66.40, delivered carlots.

Atlanta: Demand and supply good; trend stronger; 44% $54.70, delivered.

TANKAGE

St. Paul: No change from last week, but expected demand improvement may change situation in nearby future; $68@70.

Chicago: Demand quiet; trend steady; supply fair; 60% $75, sacked.

St. Louis: Demand fair; trend firm; supply ample; $68.

Kansas City: Demand fair; trend steady; supply ample; 60% digester $67.50.

Omaha: Demand good; trend improving; supply plentiful; $70.

Louisville: Demand and supply good; trend steady; 60% protein $70@75, sacked.

Cincinnati: Demand fair; trend steady; supply ample; 60% digester $66.50, Cincinnati.

Ft. Worth: Demand fair; supply sufficient; 60% digester $70, sacked, Ft. Worth.

Wichita: Demand heavy; supply about offsets demand; 60% $80, f.o.b. plant, sacked.

UREA FEED COMPOUND

Woodstock, Tenn.: Minimum 42% nitrogen, 262% protein equivalent; $100, bagged, f.o.b. freight equalized with nearest producing plant; bulk $96.

Lima, Ohio: Minimum 42% nitrogen, 262% protein equivalent $100, f.o.b. bagged.

Pryor, Okla.: Minimum 42% nitrogen, 262% protein equivalent; $100, f.o.b. bagged; $96, bulk, cars or trucks, freight equalized with nearest producing point.

New York: Minimum 42% nitrogen, 262% protein equivalent, $100, f.o.b. bagged; $96, bulk, cars or trucks, freight equalized with nearest producing point.

Belle, W. Va.: Minimum 42% nitrogen, 262% protein equivalent; $100, f.o.b. bagged; $96, bulk, cars or trucks, freight equalized with nearest producing point.

VEGETABLE AND ANIMAL FAT (HYDROLYZED)

Ft. Worth: Demand good; supply limited; 5¢ lb., f.o.b. south Texas area.

VITAMIN E FEED SUPPLEMENT

Cincinnati: Demand good; trend steady; 50 lb. or more $1.40, less than 50 lb. $1.45, freight allowed to destination.

WHEAT GERM MEAL

Minneapolis: Demand decline has reduced price $7@8 to $54, jutes.

Buffalo: Demand and supply fair; trend steady to higher; $64.50, sacked, f.o.b.

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(Continued from page 1)

bers. Some of the highlights will be found in adjoining columns. Following is most of the text of the presentation:

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No one would dispute that feed distribution patterns of the future will conform to changes and needs of agriculture. Major production activities will continue to remain on family farms, but they will increasingly assume characteristics far different from what we have known in the past. With the trend toward greater specialization and larger size units, agriculture will continue its rapid change as a capital-using industry. In order to obtain this needed capital and the degree of managerial competency to justify such investments, the commercial farmer of the future will relinquish more and more of his individual decision-making prerogatives. Like non-farm firms, he will learn to live with continued indebtedness as a way of doing business. Good record-keeping and farm budgeting practices will be forced upon him, and he will watch for dollar-saving opportunities—in both production and marketing functions. . . .

At present, purchased feed inputs account for about 18% of all farm cash expenditures, and the percentage in expanding agriculture of the future is anyone's guess. Today our interest is focused on the patterns of distribution that will continue to evolve in meeting these feed requirements.

A look at the trends of the past will give us excellent clues for the future. For example, we know that bulk feed handling was pioneered in California, is the backbone of the broiler industry in the South, is just getting a foothold in the Northeast, and is not available in many areas of the country. In other words, a trend factor may be a historical fact in one region, in progress in another, and not begun elsewhere. It is the pace-setters of today who preview the trends of the future. Then, too, we have not begun to utilize distribution technology available to us now.

WHERE WILL FEED BE MIXED?—As is true at present, feed of the future will be mixed at four locations—central mills, local mills, portable grinders and mixers, and on the farm. In the long-run, the shift will be toward demand oriented local plants. Newly constructed facilities will be of moderate size and as close to farms as dictated by carefully made plant location studies. The trend toward grain bank operations will continue to expand.

For many central mills, the trend will be in the direction of premixes and concentrates. Their advantages in buying, in utilization of by-products, and more elaborate and exacting equipment will be of paramount importance in the production of specialized and complicated concentrates that will continue to call for high protein carriers, vitamin carriers, minerals, drug additives, growth or finish regulators, and so on.

Portable grinders and mixers will be with us, but it seems unlikely they will become a major factor in over-all mixing tonnages. In some local situations, they may be important, depending on the managerial efficiency and aggressiveness of the owner and dependability of his service. The real test will come when present equipment reaches obsolescence and with inability of these entrepreneurs to compete with firms providing other services.

On-the-farm mixing is with us, and many pace-setting examples could be cited. Future expansion in this area can be expected with the trend toward larger farms and specialized production. Feed mixing units increasingly will be an important part of "systems" manufacturers will offer to integrate equipment into systematized farm operations. Cost-conscious producers will be more willing to spend several thousands of dollars to eliminate a single farm worker. Only farmers with sizeable feed-consuming enterprises and available home-grown or nearby grain will have these home mixers, and they will depend on central mills for premixes and concentrates. With rare exception, minor ingredients definitely cannot be handled efficiently by on-the-farm mixing equipment.

In some special situations, commercial feed mills may be built next to a larger commercial producer, such as a huge beef feedlot, in order to get the business. The large commercial producer in this case could benefit from the research and nutritional services that would be available through such a feed production adjunct.

UPWARD TREND IN BULK DELIVERY—Bulk delivery of feed will continue to climb steadily in future years because of the advantages it has in labor saving, lower cost, and because it conforms to mechanization of feeding operations. For large producers with rather sophisticated "systems," bulk feed will be delivered to self feeders or automatic handling systems. Agreements will be reached between producer and supplier to keep bins or tanks full without reordering and metered for payment as used. We can expect to see additional bulk relay or rural bulk stations in areas distant from mills and where production intensity is not sufficient to justify a local operation. In other areas, we shall see the advent of direct delivery from bulk hopper cars and some bag-to-bulk conversion. As I mentioned earlier, this is part of the catching up by areas that are behind in some of the advanced trends.

An important factor in bulk expansion will be the rate at which paved or all-weather roads are constructed in rural areas. Truck weight limitations and seasonal restrictions will lag behind advanced equipment for bulk services. The manufacturer who circumvents these obstacles will be the winner in the future's competition for bulk delivery equipment.

FARM OR RANCH SERVICE CENTERS—Now let us take a look at the feed dealers or retailers who serve the farmer at the local level. Again, we have many types of firms in various stages of transition toward the new trend. In years ahead, I predict that the term "feed dealer" will become uncommon. Instead, the term farm or ranch service center will describe more accurately the many functions that this local level middleman must perform for the growing and expanding demands of a specialized agriculture—independent and cooperative alike. To be sure, there will be fewer of them.

Either they will change with the times or go out of business. In the South, for instance, dealers without integrated operations have lost from one half to three fourths of their feed tonnage in the past three years. This is the type of economic force that does not insure longevity.

Another factor, of course, is the capital wherewithal to provide the additional services such as mixing, grinding, pelleting, bulk, and so on, that could easily require a dealer to make an additional investment of $75,000 more or less. To flirt with status quo, even on the shortrun, will be an extremely risky business for any of these entrepreneurs serving farmers.

MORE PROGRAMS—The competitive battle for tomorrow's farm service centers will be in the field of "programs." The producer will not be so much interested in the actual price of a ton of high quality feed as he will be in the dollar that he may earn or that will result from participation in an over-all program that includes across-the-board purchasing and marketing services. In areas where bargaining power is weakest in the marketing sphere, farm service centers will be taking the greatest risk and must provide management with top-notch ability and aggressiveness.

A service center employee who will contact producers can no longer be just a field man or salesman. He will have to be a specialist who can provide information on diseases, formulas, management, marketing and a multitude of other facts needed by specialized farmers. This will be part of the service provided in the program package sold to them.

The financial support, the program planning, promotion, and sales training will be provided by the feed man-

IMPORTED FISH MEAL
MINIMUM 65% & 60% PROTEIN
FULL MEAL (FISH MEAL WITH SOLUBLES)
DRIED FISH SOLUBLES
100% PURE
(Made from South African Pilchard)
FEED INGREDIENTS
ALBUMINA SUPPLY CO., Inc.
82 Beaver Street
New York 5, New York
Phone
HAnover 2-4174
Telotype
NY 1-3783
Albumina Peruana S.A.
Lima
Albumina Chilena Ltda.
Santiago de Chile

ufacturers and supervised by their management personnel. Competition will be exceedingly keen and margins will be low. It will be essential that great attention be paid to little details in all aspects of a service center operation — in both supply and marketing sectors. For example, loading time at the mill, volume of feed per load, rate of discharge from bulk trucks, cost per ton mile and per man hour, and such, must be studied, analyzed and kept in line.

VERTICAL INTEGRATION WILL GROW — Vertical integration will continue to expand, especially in broilers, eggs and turkeys. Some growth in contracting can be expected for hogs and beef cattle, but the rate will not be as rapid as that for poultry. This is the only way that under-capitalized farm units can expand to the scale necessary to reach production efficiency in tomorrow's competitive arena.

As you would expect, integration will continue to grow in the poor and more under-developed sections of the country. Moreover, manufacturers whose plants are distant from producing areas will use integration to stimulate nearby production and to improve the factor of location in relation to demand.

PRICING AND CREDIT HAZARDOUS—In the area of pricing, it can be expected that volume discounts based on service costs will be much more common in the future, and discounts can be expected to be given for cash. Or, phrasing it another way, there will be a charge for credit. Smart entrepreneurs will make a real effort to prove to cost-conscious producers that credit must be paid for the same as any other type of service that is rendered.

The experimental efforts in the formation of feed bargaining groups, fostered by the Farm Bureau in southern California, will probably continue in that area and in other areas where independent producers are not tied in with integrated programs and where the marketing problems are less complicated.

As programs fight programs, it is likely that we shall have a continuation of unrealistic credit risks being taken by some program initiators who will be attempting to keep tonnage up or to increase sales. This will merely postpone days of reckoning.

CONCLUDING STATEMENT—In summing up, feed distribution patterns of the future are already indicated by some pace-setters today. They vary from region to region and will keep abreast of changing agriculture by providing the type of feed and demand-oriented services needed in the continuous agricultural revolution. Adjustments in organizational structure, facilities, financing, and need for a greater breadth of managerial talent are indicated. Competition will be tougher, margins will be lower, and producers will be more skillful in their ability to judge the dollar value of program-related services rendered by one firm as contrasted with a competing firm.

Acceptance of the status quo will mean economic suicide. Detailed cost accounting at all operational levels will be essential and quick access to pertinent facts will be a must for fast managerial decision-making. Unforeseen indicators of change must be recognized immediately and plans put into effect for operational adjustments and shifts. Included in these changes must be consideration for attitudes and the image which producers and public alike have of the firms involved. This means that proper public relations must be attained in all facets of the agri-business community. The challenges are many, the rewards can be great, and there is little doubt that the crossroads ahead offer no clear signposts pointing toward correct decisions for the future.

HEW

(Continued from page 1)

a political build-up for a second term in 1964.

As for the Delaney clause and other problems in FDA regulations which affect the feed industry, there was no immediate indication of what the new appointment might mean. However, FDA itself is on record as favoring a change in the law which would exempt from the Delaney clause feed additives which do not leave any residue in the end products and which do not harm animals.

(Some industry sources felt that the Ribicoff appointment might result in a more favorable situation than would have been the case under other possible appointees.)

Meanwhile, there still appears to be some apprehension, within FDA and in the legal fraternity concerned with federal controls, that the new administration may take the top FDA jobs for political appointments and move out the two top men as soon as it takes over.

It may be recalled that when President Eisenhower took over the reins of government in 1952, there was a drive to get the jobs of the top men at FDA, and it was only the intervention of close personal friends of the President that prevented the FDA jobs from becoming political footballs.

As things now stand, the FDA internal organization generally reflects career men who have come up through the ranks. It is true, however, that in enforcing the law Congress has handed them, FDA people have had a stormy job. Some persons say that it has been tough to hew to the line and resist pressures from interests which felt that rigorous enforcement of the law and its regulations represented a grab for power.

If the worst of apprehensions are realized and FDA is thrown open to the political wolves, it would indicate a curious contradiction between the Kennedy who campaigned for the presidency and Kennedy the President.

Should it appear to the legal fraternity that the FDA jobs were to be made political appointments, it would not be surprising if the strong legal fraternity practicing in the FDA field would rise immediately in an effort to head off any such possibility.

A political move on FDA at this time would seem to be a repudiation of the Kennedy assignment of James Landis to report on operations of regulatory agencies with the idea of strengthening their operations.

Under the outgoing administration, it had become increasingly evident that the so-called independent regulatory agencies were headed for stronger controls in the specific fields; that a community of action among such agencies as the Federal Trade Commission, FDA and USDA had been developed; and that the outlook was for sharper and more drastic enforcement of the various laws those agencies administer.

The foregoing observations are, of course, highly speculative, but they represent a viewpoint which, it would seem, should be divulged in order to put industries involved on guard if they believe that the non-political aspects of the regulatory agencies should be retained.

HOG LEASING

(Continued from page 1)

some other states with branch stations within the next six months now," he says.

"How many sows do we expect to lease out to farms eventually? We couldn't possibly establish a maximum figure. At this point, there doesn't seem to be any reason why we can't keep growing indefinitely . . . there just doesn't seem to be any ceiling that will finally restrict expansion."

Mr. Morris now has a crew of eight men to handle the leg work in the swine leasing business. Some of these men are trained in swine management and feeding. Others specialize in the selling of leasing arrangements to farmers.

Briefly, here is how the leasing program works: Farmers can contract for up to 40 sows from Swine Improvement Assn. The minimum number they can order is 10. In addition, they are supplied with the right number of boars to service the sow herd.

From the time the animals are delivered, the farmers are on their own—that is, unless they ask for management advice or indicate they need some assistance. There is no charge for this management service, explains Mr. Morris.

Gilts Returned

No money changes hands under this swine leasing program. The Swine Improvement Assn., in return for the loan of the breeding stock, receives gilts instead of money.

Farmers must return the original sow, plus one gilt for each animal loaned. For example, if a farmer leases 30 gilts and two boars, the Swine Improvement Assn. will be returned all of the original animals loaned, plus 32 gilts.

The only breeding herd holding station used by the swine lending organization right now is located at Meservey. "We buy all over the state and take them back to the station," says Mr. Morris. "We try to keep some animals on hand all the time so farmers can come to Meservey and take a look at the quality breeding stock they will be leasing from us.

"We buy the stock from purebred hog breeders around the state. Our sows meet rigid specifications, and our boars must be production tested. We know that much of the success of the venture is based on the necessity for high-quality breeding animals.

"Yes, we are dealers for McMillen Feed Mills, too," said Mr. Morris, "but we don't require farmers working under our swine leasing program to buy from us. In fact, only about 20% of our total feed sales stem from farmers associated with the sow program."

Feed Sales

Mr. Morris reported that he sold 6,750 tons of feed during the first 11 months of this year. This represents a 25% increase over 1959 sales during the same period. Mr. Morris has been a dealer for McMillen Feeds for three years now.

"We have a working agreement with an elevator in Meservey, and can offer our feed-buying customers either a complete feed or a concentrate. Most of the farmers are buying concentrates. Of course, we also offer a credit arrangement on feed sales."

Fashion Farm Cow Pool, the business that gave Mr. Morris his start a few years ago, doesn't get his undivided attention any more. As he puts it, "There are too many irons in the fire now.

"But the cow pool is coming along fine. We are milking between 1,100 and 1,200 cows now, and this is about as high as we can go with existing facilities."

All the cows in the Fashion Farm Cow Pool are owned by "outside" investors. This is one change that has taken place—in the beginning, all of the cows were owned by farmers who felt they could make as much money having Mr. Morris milk the cows for them as by doing it themselves. Milk from this Grade A plant is shipped to a market in Kansas City.

RATIONS

(Continued from page 1)

lb. were produced in 16 weeks on 1.85 lb. of feed per pound of gain.

These feeding trial results, representing substantial reductions in amounts of time and feed required to produce market turkeys, were obtained by using a daily nutrient intake standard in formulating experimental diets.

A detailed report on the trial was published recently by the Oklahoma poultry science department, and further information on the Oklahoma work is expected before long.

The report—called "A Method of Formulating Turkey Starter and Grower Diets Using Daily Nutrient Intake as the Feeding Standard"—was authored by Kenneth E. Dunkelgod, Earl W. Gleaves, Lealon V. Tomkinson, Rollin H. Thayer and Robert J. Sirny. A copy of the publication, Processed Series P-361, may be obtained by writing Dr. Rollin H. Thayer of the poultry science department at Oklahoma State.

Feeding standards which are being used as a basis for formulating turkey starter and grower diets specify that nutrients be provided as a percentage of the total diet or in terms of a specific number of units of nutrient per pound of diet, the authors point out. These standards, they say, do not take into consideration feed intake per bird per day, nor the nutrient requirements as determined by different rates of growth. A feeding standard expressed in terms of daily nutrient intake would make it possible to provide each nutrient at the level required for the growth rate inherent in the turkey being fed, and to supply these nutrients in the quantity of feed which it is anticipated each turkey would eat during any given day of the growing period.

The application of a daily nutrient intake feeding standard of this type in the formulating of turkey starter and grower diets, and the results obtained when these diets were fed, are reported in the new publication.

The nutrient requirement data used in formulating the experimental diets were obtained from a feeding trial in which semi-purified experimental starter and grower diets were fed and 1 lb. of market turkey was produced on 2.2 lb. of feed. These nutrient requirement data included daily feed intake per turkey by weeks, ratios of individual amino acids to total crude protein, protein intake in grams per bird per day by weeks, and caloric intake expressed as calories of metabolizable energy per bird per day by weeks.

Through the use of linear programming with an electronic computer, starter diets were formulated which contained practical feed ingredients and were equivalent in protein, amino acids and energy to the original semi-purified starter diet. A series of grower diets was formulated by modifying these practical starter diets at weekly intervals during the entire growing period, based upon the daily nutrient intake data obtained in the original feeding trial with semi-purified diets. The way in which these data were applied in the formulation of the experimental grower diets is described in detail in the publication.

The practical-type diets used in the trial were not entirely feasible from a cost standpoint, the researchers observed, but do represent definite progress toward accomplishment of that objective. A further reduction in cost will have to be made before these diets become economically feasible, the report said. However, possible ways and means of accomplishing this objective are currently under study. Solutions to certain ingredient and mixing problems are being sought by the Oklahoma researchers.

Chicks Placed in Principal Broiler Areas

(000's omitted)

Week ending	Maine	Conn.	Penn.	Ind.	Ill.	Mo.	Del.	Md.
September 24	1,008	473	695	610	120	650	1,442	1,894
October 1	1,048	433	529	581	102	615	1,552	1,903
October 8	1,037	358	778	589	48	643	1,429	1,838
October 15	988	508	498	520	40	518	1,596	1,752
October 22	993	362	595	643	78	602	1,312	1,980
October 29	1,016	399	678	418	78	568	1,447	1,797
November 5	1,053	351	687	654	100	535	1,480	1,801
November 12	1,022	427	808	689	93	551	1,372	1,876
November 19	1,024	394	783	719	111	622	1,514	1,762
November 26	1,039	403	871	645	108	593	1,620	1,697

Week ending	Va.	W. Va.	N.C.	S.C.	Ga.	Fla.	Ala.	Miss.
September 24	778	313	2,645	276	5,961	200	3,107	1,944
October 1	678	423	2,844	303	5,946	202	3,085	1,880
October 8	809	326	2,873	326	5,694	202	3,084	1,884
October 15	713	356	2,909	317	5,750	198	3,099	2,027
October 22	684	385	2,746	302	5,624	228	3,053	2,057
October 29	714	363	2,820	308	5,627	205	3,156	2,094
November 5	767	400	2,890	284	5,923	178	3,132	2,179
November 12	867	327	2,876	319	5,968	210	3,110	2,196
November 19	928	294	2,993	339	5,974	186	3,133	2,198
November 26	921	335	2,974	306	5,805	209	3,098	2,244

Week ending	Ark.	La.	Texas	Wash.	Oregon	Calif.	Total 22 areas 1960	Total 22 areas 1959
September 24	2,906	325	1,658	242	237	1,086	28,489	24,573
October 1	2,825	356	1,623	216	181	1,109	28,454	24,612
October 8	2,865	346	1,615	256	208	1,033	28,261	24,674
October 15	2,884	319	1,635	218	214	1,024	28,103	23,755
October 22	3,022	337	1,608	263	137	892	27,903	24,066
October 29	2,998	341	1,660	182	158	1,051	28,068	25,712
November 5	3,222	345	1,642	262	126	1,036	29,534	26,271
November 12	3,375	371	1,739	290	194	1,117	29,787	26,884
November 19	3,328	385	1,760	290	210	1,114	30,061	27,133
November 26	3,327	362	1,730	208	182	1,108	29,692	27,416

New Office Opened

ATLANTA—Formal opening of the new home of the Cotton Producers Assn. was held at 3348 Peachtree Road N.E.

The new brick and granite structure contains 67,000 sq. ft. of floor space. The co-op operates throughout most of Georgia and Alabama.

Included in the lobby is a massive display of the various products handled by the association.

DIES AFTER FALL

PORTLAND, ORE.—Mrs. Thelma S. Alexander, wife of John Alexander, Alexander & Co., died in a Portland hospital following a serious fall at her home. She was 60.

PANEL

(Continued from page 6)

feeds. He suggested that equipment should be grounded because some drugs are electrostatic. Material used for cleaning equipment should be stored in such a way that it will not get mixed up with other ingredients. Bulk carriers also should be cleaned after delivery of medicated feeds.

Weights and measures of drugs. A system should be maintained for checking on these.

Labeling of medicated feeds. FDA inspectors check to see if the analysis agrees with the label. Bulk feed also should be labeled in some way, such as attaching a tag to the invoice.

General sanitation of the mill. Pesticides that are highly toxic should be avoided.

Wage and Hour Law

Mr. Ludemann discussed some of the major provisions of the Wage and Hour Law, noting that it is difficult to apply in the grain and feed industry because of many unusual situations. Exemptions from the law include executives, retail employees and outside salesmen. In the grain storage industry an exemption from overtime pay requirements is made for 14 weeks within certain limits. Total exemption is provided if 75% of the volume of a business is retail.

Mr. Dempewolf urged feed and grain men to acquire a better understanding of grain grading and inspection. "You shouldn't guess about the grade of a shipment and then get a surprise when it reaches a terminal market." He said that grading is not so technical that elevator operators couldn't determine the quality of grain they are handling.

Kenneth Ludlow, assistant executive secretary of the Western association, offered some suggestions on meeting requirements of the bonded grain warehouse law in the operation of a grain bank. Warehousemen must take possession of grain under one of a number of plans, he said, and the association has recommended a contract plan which makes clear to producers what the charges are.

Need Education

Mr. Spindler's comments were directed at improving the accounting and credit practices of feed businesses. "You have educated your customers to pay you when they are ready. You need to educate them to the idea of prompt payment." He made these suggestions: Get customers to sign notes when extending credit—notes that can be collected by discounting at a bank if necessary. Send statements every month, and again in the middle of the month to those who are not prompt.

There are many reports of vitamin A deficiency symptoms in cattle in Iowa, Dr. Summers said. The condition is somewhat difficult to diagnose, and not all conditions reported may be due to vitamin A deficiency, he said. However, many cattle affected have responded to vitamin A supplementation.

The situation is somewhat puzzling, he said, since typical Corn Belt rations are good sources of carotene. He referred to work reported from the University of Illinois which indicates that an accumulation of nitrates in plants such as corn inhibits conversion of carotene to vitamin A.

Iowa State currently recommends addition of 5,000 to 7,000 I.U. of vitamin A for cattle fed 2 to 5 lb. of hay and 10,000 units if no hay is fed.

IOWA

(Continued from page 6)

meat," he said. "And while they would all like to know, they are busy men and just don't like to keep records.

"This is the opening for the outside salesman. He can help them keep records, and at the same time, show proof of what his feed will do. There is just one word of warning here: Be certain that the customer is following a good, sound feeding program or he may blame poor results on the feed."

MANAGING YOUR FEED AND GRAIN BUSINESS FOR PROFIT—In broad outlines, management responsibility in the feed and grain business is to see that capital and labor are used to produce a profit, George Greenleaf, executive secretary of the Ohio Grain & Feed Dealers Assn., said. It performs its duties by planning, organizing and controlling. "Management is the only factor one company can expect to have that no other companies exactly duplicate," he said.

The top qualification of a manager is that of leadership, he continued. "Show me the employees, and I'll describe the manager."

Mr. Greenleaf pointed out these important functions of management: Ability to plan and budget, have knowledge of input and output, respect competition. "Competition should be treated as a constant threat. The manager should look for a unique advantage over his competitor—it may be location, facilities, product or management itself. Survey these advantages."

He also provided a list of common shortcomings of feed industry operations as "ways to lose a customer": Make him unload his own truck, don't hurry, don't keep his feed clean, don't call him by name, fill his bags too full, put his feed in torn bags, fill out his sales ticket wrong, don't let him bore you with questions, don't deliver feed when promised, never call on customers.

HOW TO MAKE MONEY IN THE FEED BUSINESS—"As long as our American farmers can find a market and can make a profit in the production of milk, meat and poultry, there will be an opportunity to sell feed," said C. S. Force, president of Grain & Feed Dealers National Assn. "But this doesn't necessarily mean that it will be easy for feed companies to show a profit.

"There are many outside influences such as competition, inventory losses, bad accounts, high labor and so on," he continued. "In Michigan, the average good country elevator will gross about 14 to 15% on sales and services. Costs of doing business are around 12% leaving a net of 2 or 3%. There can't be many mistakes on this kind of a margin if the company is to be sound financially."

Mr. Force said that in all of the good progressive elevator organizations he has known, a good manager sets the pace and leads the company. Next vital step is for the manager to surround himself with key employees who will accept the responsibility of the company's operations.

"Here is something else I've learned," he said. "Low-priced men might well be the most expensive in the long run. In my own organization, our highest paid men are really our cheapest men."

Mr. Force also stressed the importance of a constant training program for employees. It takes a trained team to make up a top grain and feed organization in any community, he reported.

The importance of good services was emphasized. Delivery service, grinding and mixing, storage use of grain bank are examples.

"Don't forget to charge for these services," cautioned Mr. Force.

"A good service saves customers time and money, and you should charge accordingly. Lots of free service becomes expensive and is not necessary.

"I believe that every good customer should be contacted on his farm at least six times yearly. Don't overlook the farmer's wife, either. In many instances, she is the deciding partner and likes to be recognized. If a good outside salesman is not available—or even if he is—a few customer calls by the manager or owner help build the business."

Here, in summary, are a few of the other points covered by Mr. Force:

(1) Operate a modern plant. A plant has to be modern to meet today's competition. The facilities and methods used to operate a business in 1940 will not work in 1960.

(2) Work closely with your agricultural college. Farmers depend on advice and recommendations from your state college, and you'll find these college representatives cooperative and anxious to help out.

(3) Be cautious with accounts receivable. Sell and merchandise feed to people who can pay their bills. Any feed dealer who goes beyond 60 days on accounts has gone out of the retail business and into the finance business. Set up a credit plan and enforce it.

(4) Be a part of your community. Operate your business so that you have the respect and confidence of all farm customers in your trade area. People do business with those whom they know and like.

"There will be a decided transition in the U.S. Department of Agriculture in the next two months," Mr. Force said. "The $14½ billion Commodity Credit Corp. will lose six directors and probably all of its vice presidents. It will be only a short time until all top policy people in the USDA are replaced.

"While we feel that John Kennedyl's policies in March may be different from the statements he made during the campaign, we do hope that the new administration will take a broad look at all of the problems. Any controls or regimentation imposed upon agriculture will seriously affect the grain and feed business."

WHO PROFITS FROM PROFIT?—Aimed at the word "profits" is a campaign of corruption, Ken Ludlow, assistant secretary of the Western Grain & Feed Assn., said in a talk at the convention.

In a U.S. Chamber of Commerce slide presentation entitled, "Who Profits from Profit?" Mr. Ludlow said that the word " 'profit' has been so misinterpreted, maligned and misused that, to some, it has become almost a dirty word, representing something bad for the country and for the people in it."

"A free enterprise is really a mutual profit system," said Mr. Ludlow. "Through it the buyer and seller both gain; employer and employee both gain; tenant and landlord both gain. If there were not this expectation of mutual advantages—mutual profit—there would be no transaction.

"The American profit system offers a desirable goal as a spark to human effort. It promises reward for initiative and enterprise. It is also a characteristic of man that he must have an incentive to do his best work—incentive in the form of wages for work, interest for savings, rent for the use of property and profit for the use of invested capital. This is the major function of the profit system—to stimulate voluntary effort," Mr. Ludlow stressed.

DUST EXPLOSIONS—The importance of good housekeeping and elimination of all potential ignition sources was stressed in a dust explosion demonstration and talk given by J. R. McCann, manager of fire prevention for Ralston Purina Co., St. Louis.

Referring to the fire prevention triangle—(oxygen, fuel and heat), Mr. McCann said that every pound of dust (fuel) we can eliminate is one of the best forms of explosion prevention.

Even in a clean plant, if an explosion occurs, the relative amount of damage will probably be small, Mr. McCann stated.

Control of heat is also a must in preventing dust explosions. By eliminating potential ignition sources through good electrical equipment; by rigid enforcement of no smoking rules; by careful control of cutting and welding practices and other similar precautionary measures, ignition sources can be controlled, he emphasized.

Kermit Eschbach, F. Mueller & Sons, and fire chief in Grand Mound, Iowa, followed up Mr. McCann's demonstration with a suggestion that feed men get together with fire department personnel in their communities and show them through their mills and elevators. In this way, he said, in case of a fire, the fire chief can have a plan in readiness for combatting it.

MARKETS

(Continued from page 2)

f.o.b. the farms, with practically no profit to the producers.

Corn prices remain practically unchanged from $1.10@1.22 bu., depending upon locations. Fairly good buying interest in soybean meal this week has caused the market to advance $2.50 ton. Cottonseed meal prices have remained practically unchanged. Cottonseed hulls continue to be in tight supply. A few trades are being made in the Southeast at $23 @24 ton, and in the Mississippi Valley at $19 ton.

Most of the citrus processors are now in operation, and many are hoping to be at near maximum production by the end of next week. Although citrus pulp is still very scarce because demand still is greater than production, prices remain firm at $47.50, f.o.b. shipping points. However, it is reported that in the dairy producing area, farmers who went along without any citrus pulp for approximately two months have found that they can substitute other ingredients in their rations.

Northeast

Winter swirled into this region on a howling blizzard from the Southwest and brought with it the promise of a quickening in demand for formula feed. Running time could increase if the stepped up demand materializes.

Dairy feeds and egg mashes remained the feed man's bread winners this week. Some turkey feeds continued to show up in the sales tonnage and broiler feeds should show an improved tone soon.

Egg prices were down in the East but broilers firmed up ½-1¢ lb.

Corn featured the ingredient market during the week, with a 5¢ rise and it is likely that the cash market has bottomed out. Oats tried to push ahead but couldn't make it and ended about unchanged. Barley and feed wheat were steady.

Soybean oil meal (44% and 50%) rose 50¢-$1 on a cut in production, plus a better undertone and levels could work higher. Other vegetable proteins held steady.

Hominy was independently strong and up $1-$1.50 on a drop in production and a well-priced relation to corn. Other middle proteins were about unchanged.

Bran and middlings quickly strengthened as a result of the severe snow storm.

Running time of formula feed manufacturers averaged 36 hours this week.

Mountain States

With heavy winter weather coming to the Rocky Mountain area, cattle feeding is on the rise and picking up well. Heavy snows and storms have swept the feeding ranges and cattle are now coming into the feedlots in strong numbers, feed men report.

Poultry feeding is going down, as usual at this time of the year, and will not pick up again until early February.

Prices and volume of feed sales are holding steady and are about the same as this time last year.

Pacific Northwest

Inquiry from mixers for most types of feeds appeared to pick up slightly near the close of this week's trading as a reflection of seasonally cool temperatures and snow coverings east of the Cascade range. Available offerings, however, were still adequate to plentiful, although the dairy and cattle feed movement increased due to the weather conditions.

Feed ingredient prices appeared somewhat more stable while the demand was mixed. Trading was slow and draggy for some items and fairly active for others. Whole feeding grains followed an irregular price trend with corn and milo gaining 50@ 75¢ ton, while barley listings dropped 50¢@$1 ton for the trading period.

Quotations were firm for most animal protein feeds with mixers reporting that fish meal prices are now on the basis of Canadian herring meal.

Pacific Northwest alfalfa hay trading was described as being moderate with the improved inquiry meeting a rather firm holding policy on the part of most growers. Prices were quoted within the previous ranges of $32@36 ton baled, delivered Portland and Seattle feeding districts, with the average quote at $34 ton.

Ohio Valley

Sales of formula feeds are continuing at the fair levels of recent weeks, with demand reported anywhere from quiet to good. In other words, the expected early winter business upswing has not yet developed sufficiently to be noted by more than a minority of Ohio Valley feed manufacturers.

But significant weather changes early this week tended to improve business prospects quite radically. A long period of warm and dry weather was followed by a 24-hour rainfall and a sharp drop in temperatures.

And it was generally agreed that a week or more of sub-freezing weather will have a decidedly beneficial effect on the formula feed business, largely because of the considerable increase in the under-cover feeding of farm animals.

Because of the dry weather during the corn harvesting period, only a minimum percentage of the harvest is being classified as "wet corn." This should be consumed within a brief period, in sharp contrast to the situation during most recent years, when wet corn acted as a deterrent to the animal feeding of more than minimum tonnages of prepared feeds.

INDEX OF ADVERTISERS

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Abbott Laboratories .....
Aeroglide Corp. .....
Agri-Tech 96
Albumina Supply 100
Allied Chemical Corp., Nitrogen Div. .....
Allied Mills 42
Amburgo Company 41, 42
American Cyanamid Co. 73
American Dehydrators Assn... 28
American Elev. & Grain Div...
Anderson Box .....
Anderson, V. D., Co. 82
Arbor Acres Farm 34, 81
Archer-Daniels-Midland Co., Alfalfa Division 100
Armstrong, O. B. .....
Aubrey Feeds .....

Babcock Poultry Farms .....
Baker, H. J. 71
Barnard & Leas Mfg. Co., Inc. 78
Baroid Chemicals, Inc. Subsidiary of Natl. Lead Co...
Bartlett, C. O., & Snow Co...
Baughman Mfg. Co., Inc. ....
Baxter, A. E., Engineering Co.
Beardstown Mills Co. .....
Bemis Bro. Bag Co. .....
Berg, Paul .....
Black, Sivalls & Bryson, Inc...
Blatchford Calf Meal Co. 22
Blomfield-Swanson 60
Borden Co. 31
Bowman Feed Prod. 60
Bramco Alfalfa Milling .....
Brower Manufacturing Co. ... 76
Brown, Jeff D., & Co. .....
Bryant Engineering Co. .....
Burlap Council 32, 33
Burrows Equipment Co. 80
Butler Chemical Co. 19
Butler Mfg. Co. 86

C-K Processing Co. 20
Calcium Carbonate Co. 58
California Pellet Mill Co. 78
Caple, A. B. .....
Cardinal Scale Mfg. Co. ....
Carey Salt .....
Champion Portable Mill Co...
Chase Bag Co. 42
Checkerboard Grain Co. ....
Chick-Master Incubator Co. ..
Clinton Corn Processing Co... 76
Clofine, Herbert K. .....
Clupak, Inc. .....
Cobb's Pedigreed Chicks 33
Collier Livestock-Feeder Co... 74
Colonial Poultry Farms 29
Columbia Phosphate Co. .....
Columbia Quarry Co. 78
Columbian Steel Tank Co. ..
Commercial Solvents Corp. .. 9
Consolidated Blenders, Inc. .. 99
Consolidated Quarries Div., The Georgia Marble Co.
Corn Products Sales Co. ....
Custom Millers Supply Co. .. 60
Czarnikow Rionda .....

Daffin Mfg. Co. 20
Dannen Mills, Inc. 23
Darling & Co. 99
Davies, Wm. E., Co. .....
Davis Enterprises 41
Dawe's Laboratories, Inc. ... 37
Day Company, The .....
Daycom, Inc. 60
Day, Jas. P., Inc. .....
Deere, John, Co. 88
Delaware Poultry Laboratories
Devold, Peder, Oil Co. 32
Diamond Alkali Co. .....
Diamond V Mills, Inc. .....
Distillation Products Industries 57, 82
Distillers Feed Research Council .....

Doane Ag. Service .....
Dodgen Industries .....
Dorn & Mitchell Laboratories. 27
Doty Lab. .....
Douglas Chemical Co. .....
Dow Chemical Co. 38, 39
Duplex Mill & Mfg. Co. 30
Du Pont de Nemours & Co., Inc., E. I. .....

Eastman Chemical Prod., Inc.
Ehrsam, J. B., & Sons Mfg. Co., The .....
Elanco Products Co. 44, 45
Erie Mfg. .....
Eschenheimer, Rudy, Co. 67
Ewing, Ray, Co. 88

Farmers Friend Mineral Co... 60
Fischbein, Dave .....
Fitzpatrick, U. E., & Co. ....
Flavor Corp. of America ....
Food Mach. & Chem. .....
Forster Mfg. Co. .....
Fox Co. 62
Fruen Milling Co. .....
Fuller Co. .....

Gerber Sheet Metal, Inc. ... 16
Gorton-Pew Fisheries .....
Grace Chemical .....
Grain Belt Supply Co. 77
Grain Processing Corp. 85
Gump, B. F., Co. .....

Hall Distributor Co. .....
Hand, Peter, Foundation 3, 14
Harshaw Chem. .....
Haugen, W. D., Co. 72
Hayes & Stolz Ind. Mfg. Co.
Heil Co., The 14
Heim Mfg. Co. .....
Henke Mfg. Co. .....
Hess & Clark, Inc. 21, 25, 64, 65, 84
Heterochemical Corp. 76, 77
Hoffmann-La Roche, Inc. ....
Hoffman-Taff, Inc. 90
Hogenson Const. Co. 74
Hogg, N. D., Ltd. .....
Holt Products 80
Honeggers' & Co. 104
Hooker Chemical .....
Howes, S., Co., Inc. .....
Hubbard Milling Co. 98
Hubbell, Charles H. .....
HyLine Poultry 40

Ibberson, T. E., Co. 56
Illinois Soy Products Co. 28
Industrial de Minerales, S.A...
International Minerals & Chemical Corp. .....
International Salt Co., Inc. .. 79
Iowa Limestone Co. 51

Jackson, Gilbert, Co., Inc... 76
Jacobson Machine Works 91
Jersey Co. 95
Johnson, A. E., & Sons ....

Kansas City Millwright Co. ..
Kansas Soya Prod. Co., Inc...
Keer & Company 58
Kellogg Co. .....
Kem Mfg. Co. 81
Kent Feeds 78
Kent, Percy, Bag Co., Inc...
Keystone Steel & Wire .....
Kindstrom-Schmoll Co. 20
Kraft Bag Corp. .....
Kraft Foods Co. .....

Laboratory Construction 28
LaBudde Feed & Grain Co... 15
Landers Mill Mfg. Co. .....
Lauhoff Grain Co. .....
Leach Mfg. Co. .....
Limestone Products Corp. of America 83
Loncala Phosphate Co. 56
Longhorn Engineering Co. ....

McCabe Grain Co., Ltd. 60
McMillen Feed Mills 55
Magnet Cove Barium Corp...
Magnus, Mabee & Reynard..
Maney Bros. Mill & Elev. Co. 100
Marine & Animal By-Products Corp. 99
Mayo Shell Corp. 24
Melos Mfg. Co. .....
Merck & Co. 5, 48, 49, 61, 69
Mid-Continent Grain Co. 42
Mid-States Construction Co...
Midwest Alfalfa Blenders, Inc. 46
Midwest Dried Milk Co. .....
Milbrew Co. 75
Miles Chemical Co. 59
Miller High Life Grain Co...
Miller, Mel, & Co., Inc. .....
Miller Publishing Co., The 92
Minneapolis Sewing Machine.. 58
Minnesota Linseed Oil Co. .. 62
Minute Maid Corp. 89
Monsanto Chem. Co. 74
Morton Chemical Co. .....
Morton Salt Co. 87
Myers-Sherman Co. 93

Nagel, Herman, Co. 84
National Alfalfa Dehydrating & Mlg. Co. 43
National Molasses Co. .....
National Oats .....
National Renderers Assn. ....
Nellis Feed Co. 82
New Bedford Fish Prod. Co...
New Century Co., The .....
New England By-Prod. Corp...
Nichols, Incorporated .....
Nordbaar, H. V., & Co. 76
Nopco Chemical Co. 42
Noramgrex Co., The .....
North American Trading & Import Co. .....
North Carolina Granite .....
Northern Biochemical Corp...
Nor-Vell, Inc. .....
Nutrena Mills .....

Olavarria & Co. .....
Oyster Shell Corp. .....
Oyster Shell Prod. Co. 60

Pabst Brewing Co. .....
Panogen Co. .....
Paper, Calmenson & Co. 19
Parks, J. P., Inc. .....
Parrish & Heimbecker .....
Parrish, N. K. 32
Paxton Processing Co. 95
Pay-Way Feed Mills, Inc. ....
Peavey, F. H., & Co. 51
Penick, S. B., & Co. .....
Peterson Breeding Farm 88
Pfizer, Chas., & Co., Inc...52, 53
Phelps Dodge Refining Co. .. 86
Pilch's Poultry Breeding Farm 93
Pittsburgh Plate Glass Co. ..
Pless, Joe N., Co. .....
Pope Testing Lab. .....
Poultry By-Products .....
Prater Pulverizer Co. 70
Productive Acres Mfg. Co. ... 15
Professional Feeds Div. .....
Publicker Industries, Inc. 11

Quaker Oats Co. .....

Ralston Purina Co. .....
Rapids Machinery Co. 72
Raymond Bag .....
Read, Gladwin A., Co. .....
Red River Alfalfa Co. 24
Reliance Feed Co. 34
Richardson Scale Co. .....
Riley Feed Co. .....
Roskamp Huller Co. .....
Ross Machine & Mill Supply, Inc. .....
Ross Mfg. Co. .....
Ryde & Co. 80

St. Regis Paper Co. .....
Salsbury's, Dr., Labs. 12, 13
Schenley Distillers, Inc. ....
Schutte Pulverizer Co., Inc...
Scott Paper 68
Screw Conveyor Corp. 34
Seagram, Joseph E., & Sons, Inc. .....
Seco, Inc. 96
Seadburo Equipment Co. 90
Shanzer Mfg. .....
Shelby Mfg. .....
Shellbuilder Co. 15
Sievert, C. W. 56
Simonson Mfg. Co. .....
Sioux Prod. .....
Small, The W. J., Co. 100
Smith, A. O., Corp. .....
Smith-Douglass Co., Inc. ..66, 67
Sohio Chemical Co. .....
Soft Phosphate Research Institute, Inc. .....
Southwest Mill Supply Co. .. 95
Specifide, Inc. 16
Spencer Kellogg & Sons, Inc.
Sprout, Waldron & Co., Inc. 22, 23
Squibb, E. R. .....
Stabilized Vitamins 35
Standard Brands, Inc. 41
Stearns Magnetic Products ....
Sterwin Chemicals Inc. 27
Stone Mountain Grit .....
Strong-Scott Mfg. Co. .....
Sudenga Industries .....
Sunset Feed & Grain Co. ....
Superior Boiler Works 51
Superior Co. .....
Superior Feed Co. 77
Sutorbilt Corp. .....
Swanson, Carroll, Sales Co. 41, 56
Syntha Lab. .....

Taste Engineering Co. .....
Texas Mill Equipment Co. ....
Thomas Conveyor Co. 93
Thompson-Hayward Chem. Co. 47
Tobias Enterprises .....
Toledo Scale .....
Toxite Laboratories .....
Travelads, Inc. .....

Ultra-Life Laboratories, Inc... 83
Union Bag-Camp Paper Corp. 17
Union Special Machine Co... 24
U. S. Industrial Chem. Co. ..
Universal Hoist Co. 51

Van Dusen Harrington Co. .. 51
Vantress, Chas., Farms, Inc...
Vineland Laboratories, Inc. ..
Vineland Poultry Lab. .....
Vit-A-Way, Inc. .....
Vitren Corp. .....
Vy Lactos Laboratories, Inc...

W-W Grinder Corporation .. 29
Wallace & Tiernan Inc. ....
Warren-Douglas Chem. Co. .. 56
Waltz-Hettelsater Engineers ..
Wattens & Co. 90
Wells, Ralph, & Co. .....
Wenger Mixer Mfg. Co. 84
Wertz Feed Products 81
Western Condensing Co. 34
Western Yeast Co. .....
West Virginia Pulp & Paper Co. 63
Wetmore Pulv. & Mach. Co... 60
White Shell Corp. .....
Whitmoyer Laboratories, Inc.. 84
Wilhoit Laboratory .....
Wilson & Co. .....
Wilson, R. S., Co. .....
Wirthmore Feeds .....
Wyatt Mfg. .....

Young, John .....
Younglove Const. Co. .....

Canada Policy Change

OTTAWA—Prime Minister Diefenbaker announced in the House of Commons that the Board of Grain Commissioners has been transferred from the authority of the Minister of Trade and Commerce to the Minister of Agriculture.

This follows recent action with respect to the Canadian Wheat Board and gives Agriculture Minister Alvin Hamilton responsibility for all agricultural policies of the government. Headquarters of both the Board of Grain Commissioners and the Canadian Wheat Board will remain in Winnipeg.

John Ely Elected

CEDAR RAPIDS, IOWA — John Ely, manager of the grain department of Quaker Oats Co. here, was elected to the Iowa state legislature in the past general election.

L. E. Church Retires From Mayo Shell Corp.

HOUSTON, TEXAS—L. E. Church has announced his resignation from the Mayo Shell Corp. effective Dec. 31. He joined the firm in 1949 as sales manager featuring Snowflake oyster shell products.

Mr. Church's association with the feed industry dates back 42 years. Starting as a retail feed salesman in San Antonio, he joined the Washburn-Crosby organization (now General Mills) in 1922 and introduced Gold Medal flour and feeds in Oklahoma and Kansas.

In the 1920's, he became manager of the feed department of Commander Larabee, Kansas City. Later, he organized the feed department of the Rea-Patterson Milling Co. (now Nutrena), Coffeyville, Kansas. When it closed down, Mr. Church moved back to Texas and joined the Bewley Mills organization in Houston.

In 1937, he was selected to head the feed department of the Houston Milling Co. In 1941 he served as secretary-treasurer of the Texas Feed Manufacturers Assn. and as president in 1943.

Mr. Church also managed the Gulf Coast Federated Feed Assn. for two years. Then he went back with the Houston Milling Co. as manager of its Brownwood, Texas, branch until the business was sold to the Continental Grain Co.

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